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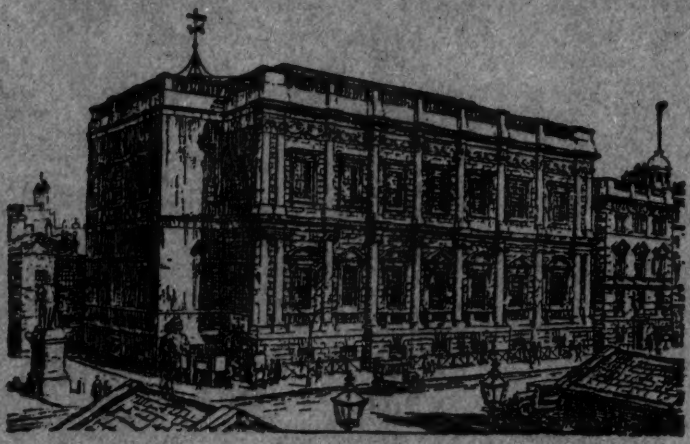

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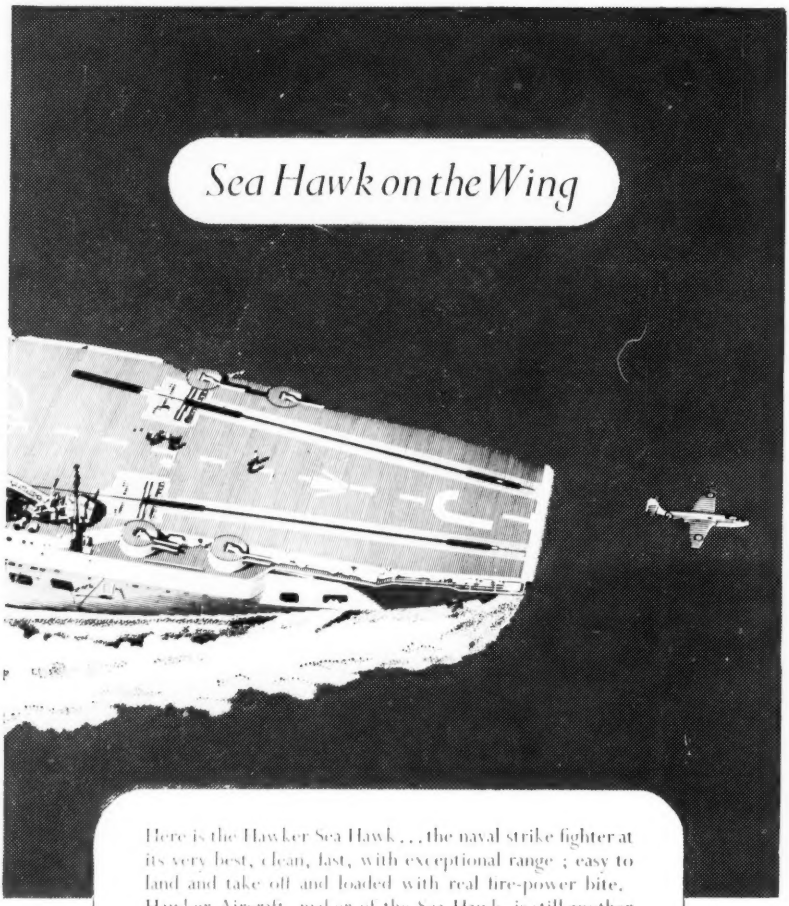

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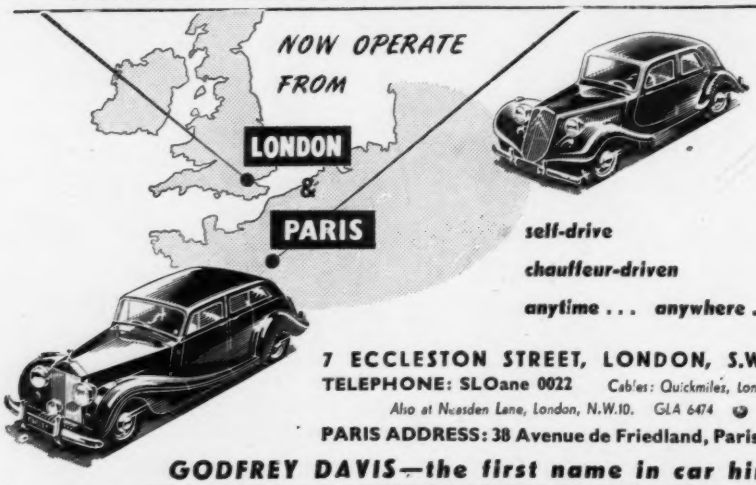

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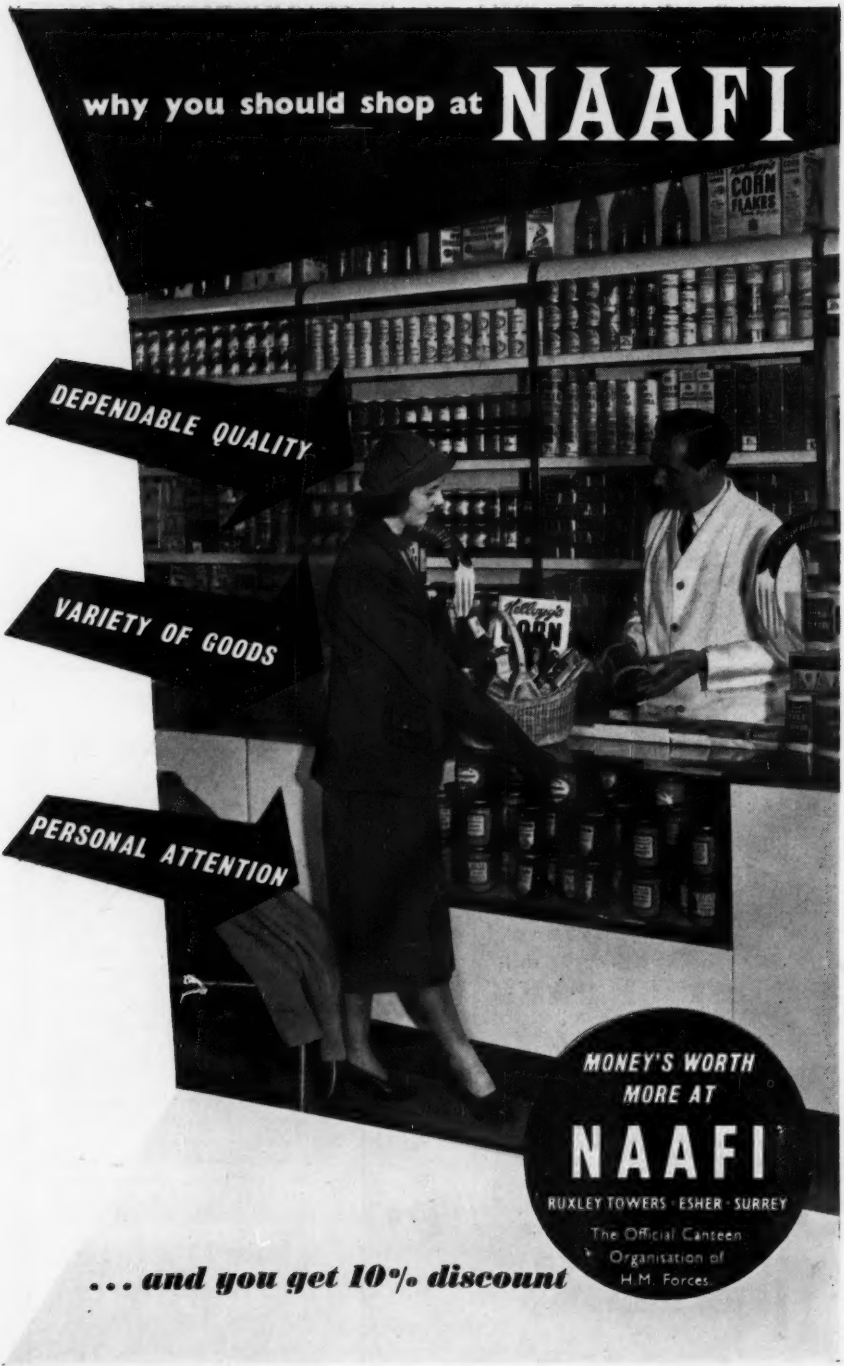
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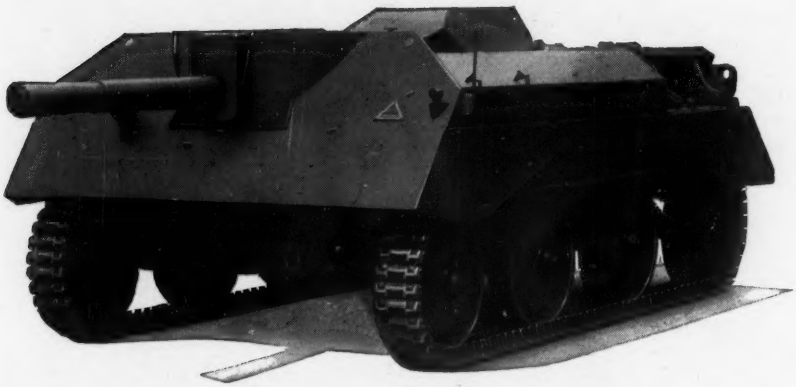

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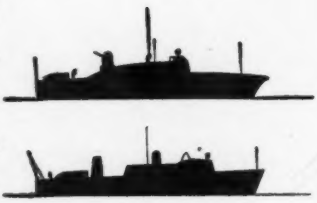

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Lieut.-General Sir Colin B. Callander, K.B.E., C.B., M.C., has accepted the Council's invitation to serve as the War Office Representative Member on the Council in the place of Lieut.-General Sir Richard N. Gale, K.B.E., C.B., D.S.O., M.C., on his vacation of the appointment of Director-General of Military Training.

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The medal will be awarded for the best essay contributed by a member of the Institution on :—

"Changes in Naval Warfare owing to new and modified weapons."

Essays must be typed in triplicate, and each copy must be clearly marked "Eardley-Wilmot Competition" on the outside. Care should be taken to avoid confidential matter. When a reference is made to any work, the title of such work must be quoted.

Essays must be strictly anonymous, and each must have a motto, which must be written on the outside of each copy. They must be accompanied by a sealed envelope with the motto written on the outside, and the competitor's name inside.

All essays must be sent by registered post, addressed to the Secretary, Royal United Service Institution, Whitehall, London, S.W.1, and must reach the Institution not later than 15th November, 1952.

PRIZE

A silver-gilt medal and eighteen guineas will be awarded for the best essay. If this, or any other, merits publication in the JOURNAL, payment will be made at the usual rate. In the case of any essay written by a serving officer, the Editor will seek permission from the appropriate Service Department before publication.

ARRANGEMENTS FOR VIEWING THE CORONATION PROCESSION

The scope of the arrangements to be made for viewing the Coronation Procession has been considered by a Committee set up by the Council, and the following is published for the information of members.

Compared with 1937, the estimate received for erecting similar stands to-day is over four and a half times as much. After allowing for a reasonable increase in the costs of other services, it was felt that the price of seats which would have to be charged to-day would preclude many members from applying. The prices in 1937 were three and two guineas.

Arrangements are, therefore, being made to provide raised standing room in all suitable viewing places at a very moderate cost. There will, of course, be chairs in other parts of the buildings.

Full details will be published in the JOURNAL for November. (See also Secretary's Notes in the JOURNAL for May, 1952.)

MUSEUM

ADDITIONS

A model of the battleship H.M.S. *Revenge*, and a model of the light cruiser H.M.S. *Galatea*, scale 1 inch = 1 foot. (3723 and 3724). Deposited by Norman Ough, Esq.

A silver replica of the Regimental War Memorial of Hodson's Horse (3725). Deposited by the Officers of the Regiment.

A Persian lambskin busby, including plume and lines, of the 16th County of London Battalion, The London Regiment (The Queen's Westminster Rifles) (9561). Given by Captain L. S. Challis, T.D.

The Standard of the Rotunda Cavalry, 1798 (9564). Bequeathed by Miss C. C. Macdonald.

A mess dress uniform of a lieutenant of the Motor Auxiliary Reserve, 1912, comprising: (1) shell jacket, (2) waistcoat, (3) overalls, (9566). Given by Mrs. E. E. Bentall.

A case containing three Indian decorations for gallantry for which all ranks of all arms of the Indian Forces are eligible. Presented by General K. M. Cariappa, O.B.E., C.-in-C., Indian Army (9567).

LIBRARY

The usefulness of the Library is at present being seriously impaired by the fact that many members are not returning books in the times allotted. In some cases indeed they are not returning them at all.

For their own benefit, members to whom this refers are asked to co-operate by complying more closely with the Library rules.

JOURNAL

Offers of suitable contributions to the JOURNAL are invited. Confidential matter cannot be used, but there is ample scope for professional articles which contain useful lessons of the recent war; also contributions of a general Service character, such as strategic principles, command and leadership, morale, staff work, and naval, military, and air force history, customs, and traditions.

The Editor is authorized to receive articles from serving officers, and, if found suitable, to seek permission for their publication from the appropriate Service Department.

Army officers are reminded that such articles must be accompanied by the written approval of the author's commanding officer.

CHANGES OF ADDRESS

Members are particularly requested to notify any change of address which will affect the dispatch of the JOURNAL.

Naval officers are strongly advised to keep the Institution informed of their address, as JOURNALS sent to them via C.W. Branch of the Admiralty are invariably greatly delayed.

CHRISTMAS CARDS

Orders for Christmas cards, specially designed for members of the Institution, can now be placed.

Card A has the crest of the Institution on the outside, and inside a reproduction of a black and white sketch of the exterior of the Banqueting House. The price, including envelopes, is 10s. a dozen.

Card B is a reproduction in colour of Queen Elizabeth I reviewing her troops before they embarked to fight the Spanish Armada; inside is the crest of the Institution. The price, including envelopes, is 16s. a dozen.

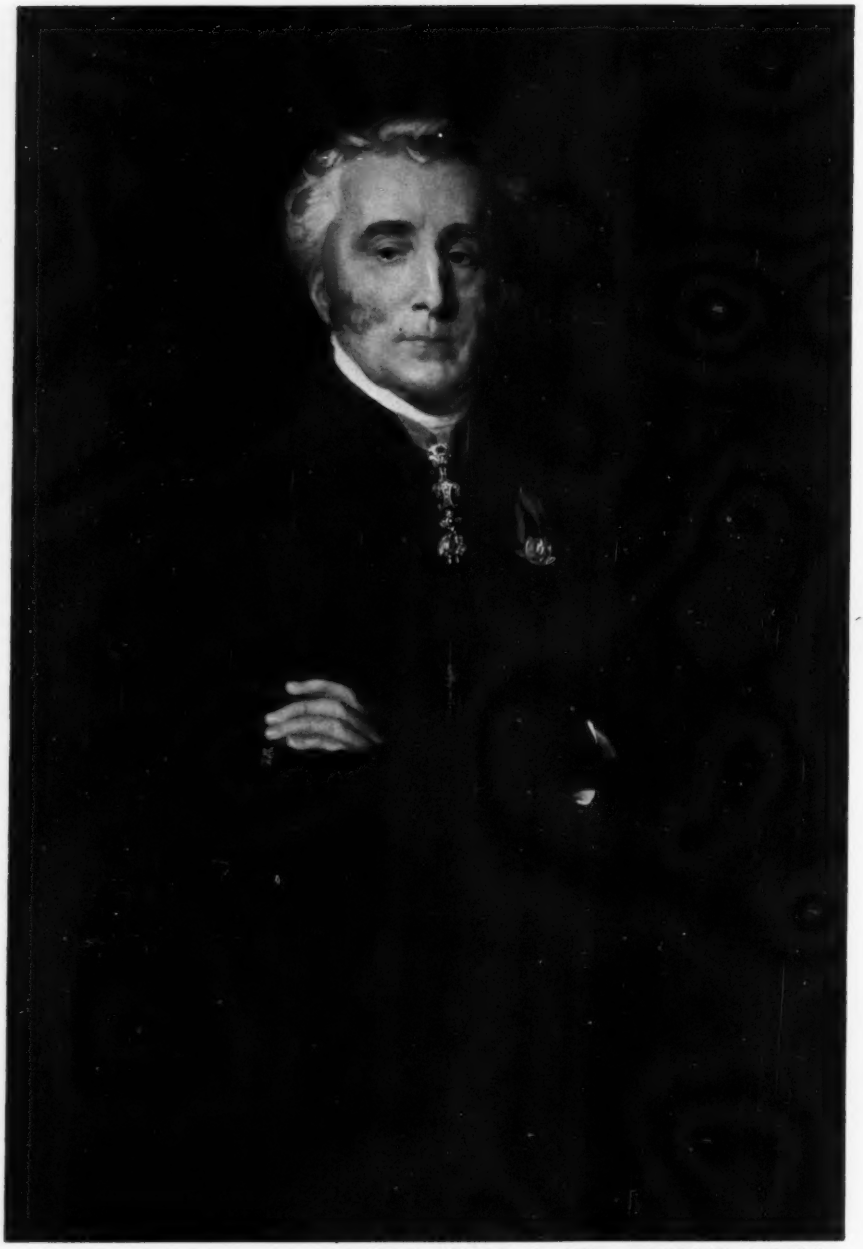
Postage in each case is 6d. for each dozen.

Members are requested to ensure that the correct remittance, including postage, is sent with their orders. It is regretted that orders cannot be executed until payment is made.

FOR SALE

THE STRATEGY OF THE SOUTH-EAST ASIA CAMPAIGN

Owing to the demand for copies of the above-named lecture, given in 1946 by Admiral the Earl Mountbatten of Burma, arrangements have been made for a reprint, with the appropriate pull-out map; price 2s. 6d., post free.



From the painting in the Council Room, Royal United Service Institution

FIELD-MARSHAL THE DUKE OF WELLINGTON, K.G., G.C.B., G.C.H.
1769-1852

FIRST PRESIDENT OF THE ROYAL UNITED SERVICE INSTITUTION
1831-1852

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PSYCHOLOGICAL WARFARE

By Mr. R. H. S. CROSSMAN, O.B.E., M.P.

On Wednesday, 20th February, 1952, at 3 p.m.

Sir ROBERT BRUCE LOCKHART, K.C.M.G., in the Chair.

THE CHAIRMAN: It is my pleasure and privilege to introduce to you today Mr. Richard Crossman, who requires no introduction as Mr. Crossman to any audience; but he is going to speak to you on psychological warfare, and in that connection I think I should tell you that he has had more experience of the practical application of psychological warfare than probably anybody else in the world.

He began here in the embryonic days of the development of what we call political warfare. He then went to the United States to establish the first contact with the Americans, and in 1942 he was appointed the chief British political warrior with General Eisenhower in North Africa and afterwards at S.H.A.E.F. and in Germany.

Today he is going to talk to you on psychological warfare in the last war, and to tell you of the mistakes that we made and what we learned from them. Although the term " psychological warfare " is an American title, I would say that most, if not all, of what the Americans learned about psychological warfare they learned from Mr. Crossman. After his lecture, he will be ready to answer any questions.

LECTURE

I AM afraid that Sir Robert pitched my claims a great deal too high. I was a member of a very large staff which worked under his supreme command until I moved across into the Anglo-American unit, first at A.F.H.Q. and then at S.H.A.E.F. It was an extremely able collection of people, and I think I can claim one thing at least—that we managed in the course of six years to make almost every mistake it was possible to make! On the other hand, we learned a good deal from those mistakes.

My anxiety today is lest the costly experiences that we had and the conclusions that we drew during and just after the war have been forgotten already by those who are reactivating psychological warfare in different circumstances. Therefore, I feel that the most useful thing I can do is to analyse what we built up and what we were trying to do during the war, and attempt to estimate how successful we were.

We went through three stages during the war: first, the defensive stage, when we had not much to say to the Germans except that we were not going to give in; secondly, the offensive stage, when we had sufficient military power for our words to be listened to with some respect; and thirdly, the occupation stage, when the military job was over and the political job began of winning the fruits of war, if we were competent to win them.

But before I come to those three stages, let me try to define the object of psychological warfare, the media of psychological warfare, and its relationship to other weapons of war.

Objects of Psychological Warfare

I take it that the object of psychological warfare is to do certain things to the enemy: first, to demoralize him; secondly, if I may coin a word, to exdoctrinate him, to undermine his belief in the totalitarian doctrine which he has been given; and thirdly, to begin the process of indoctrination. Those are the three stages of a successful psychological warfare campaign against the enemy.

Of course, on the other side of the enemy lines you have not only the enemy—by which I mean someone who is spiritually resisting your attempt to defeat his government—you have also friends who are behind the enemy lines, not because they are on his side but because they are compelled to serve him. With the latter the chief job that you have to do is remoralization. You can assume that they are on your side; your job is, first to keep them on your side, and second (this may surprise you), to keep them quiet. It is not the job of psychological warfare to organize their resistance; that is the job of other subversive operations. The job of psychological warfare is to keep them quiet until such time as their activities might be useful to us and not suicidal for them.

Fallacy of "Operational" Psychological Warfare

This brings me to another point that I want to emphasize. During the last war there was coined the term "operational propaganda," by which was meant propaganda designed to make people do certain things. In my view, this was a misnomer. There is no such thing as operational psychological warfare. Operations must be left to the Services responsible for operations. If psychological warfare gets itself mixed up with, or thinks that it is undertaking, operations, then it will get into the most grievous trouble.

I remember very vividly, for instance, that one of the early successes of British political warfare (to use the proper British expression, for "psychological warfare" is an American invention) was a catastrophe. Almost by mistake, the B.B.C., in 1941, started the V Campaign—the V sign for victory—and this spread like wildfire over the Continent, which was hoping for a second front. So successful was the campaign that it created the impression in western Europe that the invasion of Europe was imminent. It created false hopes among our friends; it made many of them do risky things and pay the penalty.

I think that it was that V campaign, which started almost by accident, that made us understand that psychological warfare may do more harm than good unless it is strictly co-ordinated with diplomatic and military activity.

The psychological warrior must therefore regard himself as a part of the military organization, and everything that he does must be fitted carefully and meticulously into the overall strategy of the war.

Unfortunately, soldiers, sailors, and airmen usually resort to psychological warfare when they are in a fix and can think of nothing else to do. I think Sir Robert will remember that whenever the Services were in a desperate predicament, they would ring up P.W.E. and ask, "Can you help us out?" The greatest mistake of the psychological warrior is to suggest he has a mysterious substitute for military action, a way out of military difficulties. If the psychological warrior ever "sells" himself

in this way, he has destroyed his profession. For psychological warfare is not an independent arm; it is not something which can do miracles on its own. It can be successful only if it is an advanced guard of a policy which is clearly defined and if it times its activities in relation to existing operations, whether of the Foreign Office or of the Chiefs of Staff. It must therefore remain strictly subordinated to Foreign Office policy and military strategy.

So much for the object and the limitations of psychological warfare.

Media of Psychological Warfare

I should like now to say a few words about the media of psychological warfare. Broadly speaking (I am leaving out the delicacies of the subject), there are two main media which are used today in this warfare behind the enemy lines. One is the leaflet and the other is radio. There are a good many other minor activities, but in the main one can speak of radio and leaflet activity, and one must then subdivide radio and leaflet activity into "black," "white" and various shades of "grey" activity.

"White" and "Black" Propaganda

By "white," I mean activity which is openly sponsored by one's Government, that is, activity which purports to be British. The B.B.C. is a "white" radio activity, and a *Passierschein* (a safe conduct pass) with General Eisenhower's signature on it was a "white" leaflet. There was no disguise; it came from the enemy, it spoke the voice of the enemy to the Germans and the Italians.

"Black" radio or leaflets mean leaflets and radio which purport to come from organizations inside the enemy country (for instance, from some illegal organization), or which, without claiming to come from any specific organization, are the sort of leaflets which the British Government would not be very proud to publish. If, for instance, one is trying to persuade a German that while he is abroad his wife is being seduced by a foreign worker, it may be necessary to have the leaflet so designed that no one can say that it comes from the British Government. That is a "black" leaflet.

Then there are varying shades of grey. For instance, one may run a radio station which is not a "black" station—because no German would be so foolish as to believe that a medium-wave station could be a secret station in Germany—but which certainly is not a B.B.C. station. Certain things can be said by such a station for which no British Government could take the responsibility.

Effects of "Black" Propaganda

Obviously in this lecture I cannot talk about "black" propaganda and not much about "grey" propaganda, because officially we never did them, but I think many people will know what I am talking about if I mention *Soldatensender Calais* and the leaflet newspaper for the German troops which was dropped punctually in two editions each day during the Normandy campaign. This was not an official British newspaper, because it was desired to use it for strategic deception, and therefore it had to contain inaccuracies for which the Government would not take responsibility.

Looking back and reflecting a great deal on my job, in which my left hand knew what my right hand was doing but my right hand, the B.B.C., had no notion of what my left hand was doing, all I would say about the "black" (*not* about the "grey") is that, on the whole, although we found the left-hand activities enormous fun, although a vast amount of talent went into them, although I am sure they entertained the

Gestapo, I have grave doubts whether " black " propaganda had an effect in any way commensurate with that of ordinary straightforward propaganda from the enemy to the enemy. I say that for the following reason.

Psychological warfare means imposing one's will on the enemy. If you want to impose the British will, or the Anglo-American will, or the Allied will on the enemy, then it has to be *your* will that you are imposing—and " black " propaganda, of course, is carefully not yours. Therfore, although it may demoralize the enemy to some extent, it does not directly assist the job of making him surrender more easily ; and, after all, the main job of propaganda is to make the men at the front surrender with less reluctance than otherwise they would do.

So if I had to advise Sir Robert all over again, I would say : put your best talent on to the " white " propaganda ; do not be diverted into the vastly entertaining and endless delicacies of the " black " varieties (for which, I must say, soldiers had a strange addiction when they were told anything about them !).

Strategic and Tactical Propaganda

Propaganda can be further divided into two forms, the strategic and the tactical. By strategic propaganda I mean propaganda which is spread to the whole of the enemy nation broadcast, leaflets, for instance, which were carried by the R.A.F. on bombing raids and were dropped over German towns. By tactical radio or leaflets, I mean propaganda addressed to a specific group, whether it happens to be a division in a predicament or an encircled garrison, or a narrow group of people at high level within, shall we say, the *Gestapo*.

It is fairly clear, when I make that distinction, that radio is an instrument ill adapted for tactical use, because there is no way of preventing people who are not meant to hear it from hearing it. If it is desired to tell a battalion in the front line that it is cut off when it is not, that cannot be done by radio without other people knowing what is being said. It was discovered, broadly speaking, that radio was an instrument of strategic propaganda with very few tactical applications.

Radio for Specialized Audiences

The only tactical applications of radio were the setting up of small " black " or " grey " stations which were addressed to highly specialized audiences and were so boring to other audiences that only the specialized groups would listen to them. I will give as an example the American radio stations in California beamed on Japan. As the Japanese had no short-wave sets at all, the only people who could listen to those radio stations were the monitors who were listening for the Japanese Chiefs of Staff. This was, therefore, a tactical operation, because it was being done for the sake of the men who were monitoring and taking down what was said. If you want to get a rumour read by important generals, admirals, and air marshals, there is nothing like putting it in a report marked " secret " ! For spreading rumours, there is nothing so good as getting " high-ups " to read such things ; the next day they talk to somebody else and, without giving the source, they say, " By the way, did you know so-and-so ?" They will not say, " I picked it up off a monitor." In those circumstances, one can expect that the rumour will spread. It was our experience that the best people for spreading such rumours were high Service officers.

Radio of this special type has its use, especially in dealing with totalitarian countries where radio listening is forbidden and where it is a high privilege to read the monitored reports of the enemy radio. A monitored report, typed out and

circulated secretly, has a great effect in spreading a particular rumour that you want to spread. It may be that this has an application today ; I do not know, I leave that to you.

Strategic Leaflets

The leaflet, on the other hand, is essentially a tactical weapon. In the last war we wasted a great deal of paper on strategic leaflets. We asked the R.A.F. on their bombing raids to drop leaflets, although they did not like doing it. The leaflets were dropped from a great height, and drifted down in the countryside over an area of 50 square miles. It was a very wasteful way of getting information to the enemy when the radio could do it so much better. I am doubtful therefore whether, in dealing with a large country, strategic leaflet raids are a very effective form of propaganda.

It was not until we perfected the leaflet bomb, which enabled us to bomb with precision a certain target, that the leaflet became important, and even then its importance, to my mind, was much greater tactically than it was strategically. This was mainly because the German enemy was a radio-listening enemy. It may be that in countries where the number of radio sets is not as high as it is in Germany we would have to use strategic leaflet propaganda ; but I consider that the real importance of the leaflet was evolved only when leaflets were dropped tactically on a particular unit to which we wanted to give a particular message.

Tactical Surrender Leaflet

The job of persuading men to surrender is infinitely easier if there is an organization, as we had during the Normandy campaign, by which a unit command could make a request for a special tactical leaflet and have it delivered quickly. The request went from Normandy to London, the instruction went to the printing presses at Watford, and the leaflets were got back (with a special squadron of Flying Fortresses to drop them) within 48 hours. It had to be done quickly if the leaflets were to have real tactical utility. On the other hand, the request had to be sent to London because the drafting of tactical leaflets requires the greatest skill and cannot be left in the hands of the average local commander. He does not know the nuances of the enemy's psychology, and if he drafts the leaflet it will almost certainly be dismissed as propaganda. The whole art of the leaflet is to appear as a simple, honourable offer by one honourable soldier to another, saying, " You have fought very gallantly ; now is the time when you have a perfectly good reason for giving in a little earlier." The job of doing that is not usually a job for the fighting soldier ; he is unlikely to understand the enemy's peculiar psychology, the peculiar sense of honour which each army has and which differs in each army with which one has to deal.

Of course, the American Army had its own leaflet units which were firing leaflet shells from the front ; but even there, a most rigorous control from Army Group and S.H.A.E.F. was necessary to ensure that the leaflets were in conformity with the requirements for successful tactical surrender propaganda.

I have dealt rapidly with the objective (demoralization, exdoctrination, and indoctrination), the media (radio and leaflet), the type of propaganda (black, white, and grey), the different ways of using it (strategic and tactical) ; and now I come to the heart of the problem—the substance of what is put into the leaflet or in the broadcast.

The Truth—But Not All The Truth

Here I must say to you something which is extremely boring, but it cost the British Government many millions of pounds to discover this, so it may be worth repeating. We discovered, after many experiments in Dr. Goebbels's technique, that the truth pays. It is a complete delusion to think of the brilliant propagandist as being a professional liar. The brilliant propagandist is the man who tells the truth, or that selection of the truth which is requisite for his purpose, and tells it in such a way that the recipient does not think that he is receiving any propaganda. The art of the propagandist is never to be thought a propagandist, but to seem to be a bluff, simple, honourable enemy who would never dream of descending to the level of propaganda.

Soldiers are very sensitive to these things. Lord Haw-Haw was a disaster to the Germans because he was obviously a propagandist. Anybody who listened to his tone of voice knew that he was.

I suggest that in the last war the British did better propaganda than any other nation in the world. The Russians, undoubtedly did the *worst* propaganda. The Americans in many ways had the failings of the Russians in the propaganda field. The Germans, because they *loved* propaganda, could not do it. You must hate propaganda to do it well, and we British did hate it and therefore took more trouble to conceal what we were doing.

From what I am saying, there arises this conclusion : if the art of propaganda is to conceal that you are doing propaganda, then the central substance of propaganda is hard, correct information. That is what you must give—hard, correct information. If you give a man the correct information for seven years, he may believe the incorrect information on the first day of the eighth year when it is necessary, from your point of view, that he should do so. Your first job is to build the credibility and the authenticity of your propaganda, and persuade the enemy to trust you although you are his enemy.

Journalists' And Advertisers' Techniques

One of the mistakes of most propagandists in 1940, when we started, was to believe that propaganda had something to do with exhortation. Let me assure you that exhorting an enemy to desert stiffens his morale. We know that our own troops, when they received a leaflet which exhorted them to desert, felt braver than ever before. Nor is it any good pouring out the most moving exhortations to become a democrat because the enemy knows that this comes from the enemy, and writes it off as propaganda.

Secondly, it is no good giving the enemy soldier the most soothing entertainment. There are many advertisers who say that the art of propaganda is to give people lovely music to lull them and then to slip in the propaganda. It was true that if we played very good dance music for a time and let the soldiers tune in to that dance music, not knowing that it came from an enemy station, they were more likely not to switch off the news bulletin when it was put on ; there was therefore something to be said for having music to fill in the gaps in order to keep the line alive.

But do not think that you will buy the enemy with jazz. You will not. Nor will you do it with brilliant descriptions of British culture. The enemy knows enough not to be taken in by that sort of thing.

Moreover, you must remember that the enemy listener is listening under grave danger of his life. There is a risk attached to listening to foreign stations in totalitarian

countries. Moreover, the listener is under appalling physical inconvenience ; his head is probably under a thick blanket, and he is listening through intense jamming, which makes listening a great strain. To play him a Beethoven concerto in such conditions is to make him switch off.

We discovered that propaganda to the enemy, listening under risk and physical inconvenience, has to be as concentrated and as apparently objective, informative, and concise as possible. You must not disguise that it is coming from the enemy, that it is an enemy who is telling the truth as soldier to soldier—and if you treat a civilian as a soldier, you will not be too far wrong, either in a cold war or a hot war, because he has roughly the same feelings about you as a soldier has. What they wanted was news.

We drew our propaganda technicians chiefly from two groups, the advertising profession and the journalists. They were the most proficient people at the job, and each had grave deficiencies.

The advertiser believed that somehow you could get people to surrender by giving them sales talk. He used to say, " Do you suffer from National Socialism ?—Buy British Democracy," on the same lines as, " Do you suffer from B.O. ?—Buy Bing's Deodorant." That sort of thing does not work ; it is too obvious. Sales promotion is all right to a captive audience ; it is all right with you and me who cannot avoid looking at posters and who have to read the Press. But the enemy can avoid reading one's propaganda, he has every incentive to switch off the radio and not to pick up the leaflet. Therefore, the usual advertising methods are not efficacious in propaganda and have to be drastically modified. The advertiser was correct, however, in one respect : he understood that you have to go on saying the same thing, however boring it is to you.

Now I come to the journalist's failure. The journalist, of course, hated the advertiser and his slogans. The journalist said that the thing to do was to give hot news, and to make every effort to get the news as hot as possible. What he forgot was that hot news is a special fiction of Fleet Street, and that it does not matter to the enemy listener whether the news is hot or cold, so long as it is new. It can be three months old, provided that it is something that the audience has not heard.

News Creation

When we wrote our news bulletins or our news leaflets, we had to order our journalists (it was agony to them !) to repeat the same news day after day in forms in which it did not *look* the same. I will give an example. We were concerned at one stage to spread anxiety about typhus coming into Germany from Russia. This was a job for the news creation department. " News creation " does not mean invention ; it means looking through all the intelligence reports, looking through all the German newspapers, and selecting true items from them—in this instance, items announcing a case of typhus. If you get all the cases nicely listed, and if you see that the fourth item in each news bulletin (not too high up, because if it is put as No. 1 item it is obviously propaganda) is about a case of typhus in a German village, if you see that over three weeks the bulletin never lacks one true item about typhus, if you see that your leaflet newspaper has a new case of typhus each day—and if they are all true cases—then you are doing good psychological warfare.

The art of propaganda, therefore, was to make the journalist form his newspaper or his news bulletin or his radio broadcast according to a strict directive which told him the kinds of news he had to use and the weight he had to give each kind. The

items had to be spaced out very carefully, and the bulletin balanced precisely. The art of propaganda is not telling lies but selecting the truth you require and giving it mixed up with some truths the audience wants to hear. The British newspapers, of course, try to *entertain* us each day, and only a few of them try to do propaganda often; the *Daily Worker* is the only propaganda newspaper *every* day. But our leaflet newspapers and radio news-casts had to be designed to keep certain themes *constantly* to the fore, whether or not there was any news about them in the daily newspapers.

Propaganda and Education

I have shown how the advertiser and the journalist each had his disadvantage. The only person who can do successful propaganda or psychological warfare is the person who cares about education; for the art of education surprisingly is the same as the art of propaganda, especially when dealing with totalitarian countries. The job of propaganda is not merely to enter into some arid debate with the Government of the other side; it is to stimulate in the people of the country thought for themselves, to make them begin to be, not cogs in a machine or units of a collective organization, but individuals. Individualism is the first act of disloyalty to a totalitarian government, and every individual who begins to feel that he has a right to have a view is already committing an act of disloyalty. This is why it is much easier to demoralize a totalitarian country than it is to demoralize a democracy in which the individual possesses that right and cannot be made a traitor by claiming to be an individual.

In leaflets, we concentrated on the famous safe-conduct pass. We spent a vast amount of money on research in getting the colour right, Eisenhower's signature right, the language right; and it looked rather like an American dollar bill when it was completed. It was very "slap-up." We discovered that we could estimate the morale of the German Army by the percentage of prisoners who had put a *Passierschein* into their wallet, because the act of picking it up and putting it away was an act of disloyalty. The German soldier was not allowed to touch it, he was not allowed to read it; if he picked it up, then it meant that we had won a tiny battle in the demoralization and exdoctrination of the totalitarian enemy.

Let us try to see where we have got to. We have reached the conclusion that in good, effective propaganda news must take priority over views, facts over preaching, and—above all—we must avoid threats. This was true of both leaflet and radio.

1940—The Defensive Phase

We were fortunate in that we started our psychological warfare in a period of abysmal defeat. In 1940 and 1941, the only thing we could do was tell the truth, and we got an immense amount of good-will in Germany by admitting defeat. Let me assure you that, from the point of view of psychological warfare, a defeat is a great opportunity, especially if you are skilful and say that your defeat is worse than it really is. You must be frank about it, franker than the facts. Then you really begin to gain the enemy's confidence.

I shall never forget the first really big raid on Berlin. It was a terrible disaster owing to conditions in the air, and a great number of planes were lost. We announced the losses of the R.A.F. before the German *communiqué* came out, and our admission of our losses was larger than the German claim. This was the greatest psychological warfare triumph of the year!

It was, therefore, singularly lucky for us that we began the job when we were being defeated and had little temptation to lie.

"Committing" the Enemy

The second thing that you have to do when the enemy is doing well, is not only to admit all your own defeats, but to "commit" the enemy. For instance, when the Germans were advancing into Russia, we said, "If they cannot reach Kiev in 10 days, then the whole campaign will break down." We calculated that it would take 12 days for the Germans to get to Kiev, and therefore we said 10 days. When it took 12 days, that represented a defeat—or, at any rate, it took the edge off the victory by suggesting that it ought to have been much bigger. If that sort of thing is done effectively, the people in the enemy country can be made to believe that they have done very badly in the middle of the glorious victories. But we had to do something more: we had to make the truth sound truthful to the enemy.

The Need For Accuracy

This brings us to the real complications of the subject, because what sounded objective to the home audience sounded like propaganda to the Germans. If we had put out the B.B.C. home bulletin in German, it would have been written off as flagrant propaganda. I think you will find that our bulletins in German were the most objective sober bulletins of all that were put out by the B.B.C., because we could not afford to be caught out in any inaccuracy. The French were willing to swallow one or two exaggerations, but the German listeners would not swallow anything, because they were on the look-out to prove us liars. I need only mention the agony caused to us by certain R.A.F. *communiqués* when we suspected that they had dropped bombs 100 miles away from the city to be bombed. Finally, we decided that we could not publish R.A.F. *communiqués* in German without further authentification because, although they were good enough for the home public, we had to be 101 per cent. accurate. We had to claim less than we actually did. There is nothing more effective than saying that there had been a moderately severe raid on Essen when 2,000 people have actually been killed. That sort of thing really gives the enemy cold shivers. But if you say that there has been a heavy raid when one bomb has been dropped, that does not have the tonic effect that you desire.

All this raised a great problem, because it meant that what we said to the enemy sounded totally different from what was said at home. This is the explanation of the extraordinary rule that all British leaflets were classified as "secret." Members of Parliament, if they could have discussed in Parliament what we were saying to the Germans, would have complained that the propaganda organization was "appeasing" the Germans. But it was essential to make the leaflets objective and credible *to a German*—not to the House of Commons!

Truth Can Be Incredible

I should like to give you one instance of this problem of credibility. One day we got a wonderful report from Norway that there had been an invasion exercise. Many German soldiers had been drowned and the bodies had been washed up in a bay; the Norwegian mayor had gone to the German general and asked, "What shall I do with the bodies?" The German general had replied, "Break in the breast bones and sink them in the sea." I offered this item to the head of the "black" propaganda. He turned it down; he said, "It may be true, but it will not be credible; it will be regarded as a propaganda story invented in England." So I took

it to the B.B.C. They said, "Is it true?" I replied, "I do not know; I am not quite sure." We authenticated the story, and the B.B.C. put it out. It was a great defeat for the B.B.C., because Germans in Norway quoted that story as proof that the B.B.C. lied. This only shows that it is not only necessary to say the truth; it must be the *credible* truth. You have to eliminate a great many things which are true if the enemy will not believe them to be true.

Psychological Warfare Intelligence

This means that the propagandist or political warrior has to have not sympathy, but "empathy." He must feel himself into the mind of the enemy. We had to establish a very large unit called Psychological Warfare Intelligence. This unit's job was that of studying the enemy's mind.

One ancillary task of our Psychological Warfare Intelligence was to remind our leading generals and politicians not to believe their own propaganda. For the most important thing is not to under-estimate the enemy, not to take him at the value you give him to your own people, but to know him as he really is.

Propaganda intelligence had another use. As we studied the enemy's propaganda, we were able to deduce from it the directive on which it was based. From that we could deduce the enemy's estimate of his own civilian and soldier morale. There is no disguising from the expert analyst what the Fuehrer estimates to be the morale of his own country, because totalitarian propaganda is carried our rigorously to rule. Therefore it is a perfectly simple job to reconstruct the enemy appreciation and directive week by week. It was one of my jobs to write the enemy directive in this way.

That work of psychological warfare intelligence is work which should be done in peace-time as well as in war-time, but I fear that the whole organization was disbanded as being something unnecessary to a civilized nation.

Relating Psychological Warfare to Strategic Requirements

I have given you some idea, I hope, of the scope of the work and some idea of the way in which it was done in enemy and enemy-occupied countries. Let me now consider the task of ensuring that propaganda is related to strategic requirements.

Here is one example. For the Ardennes counter-offensive we designed four leaflets for the four stages of the advance. We did the work *while the German offensive was still going on* and got the leaflets dead right, because we were given the advance information as to exactly the lines on which the counter-offensive would go. This means that the propagandists must be in on the inmost secrets of Supreme Headquarters. This is the reason why political warfare was a secret department in Britain.

It is also the reason why, towards the end of the war, we found that the actual planning of the propaganda had to be done at A.F.H.Q. and S.H.A.E.F. rather than in London, because that was the only point where both Government policy and the higher strategy were known. It was found that S.H.A.E.F. had to work upwards to Governments and downwards to the armies, instructing them on this integrated propaganda policy, because precise timing in relation to the campaign is the vital thing to the success of this particular job.

Conclusions

It comes to this, then: you give the news, and after years of doing nothing but telling the truth and getting no profit, you drop the instruction "Stay Put," and it

works. It works if you have held back for six years, if you have not indulged in exuberant stunts in order to get the applause of the home public, if you have been willing to be restrained—and no one can be as restrained as that if he is under the eagle eyes of Members of Parliament and Members of Congress.

If you have an organization of that sort, then it can be of modest but substantial assistance to the soldiers in carrying out their task. I will not say more than that. When morale is breaking, it will break that much quicker because the audience has already submitted to the extent of believing what you say and listening to your instructions.

Fundamentally, surely this is the task of propaganda in the cold war. Anybody who believes that it is our job to cause trouble behind the Iron Curtain in a period of peace has learned absolutely nothing from the lessons of the war. You have no right to put your friends in danger of death when you will not rescue them in time.

This means that, in peace-time, the task is extremely limited. It is, indeed, limited to the job which the B.B.C. and P.W.E. learned in the defensive period of 1940—building up credibility, studying the enemy, getting the organization set up so that, if the day comes for a more positive propaganda, it can be carried out effectively.

DISCUSSION

FLYING OFFICER C. S. LIPSTEIN: Mr Crossman has given us a very brilliant lecture, and the only question that occurs to me is how much, in the phase of positive propaganda, one should admit the objectives of the enemy. It seems to me that a very good way of putting it simply is to say, "We both desire this sort of thing; what is the best means of achieving it?"

THE LECTURER: That is not really a question that can be put to the propagandist. It is entirely a matter of high policy on which he takes instructions from his Government. We were an instrument, and it depended on British and American policy towards Germany whether we told the Germans we wanted the same as they did. The propagandist cannot question the policy; he has to operate strictly within the terms laid down by his Government.

It is true, on the other hand, that the propagandists did from time to time point out to the Governments that it was rather expensive having an organization of such dimensions if the ends which the Governments gave the propagandists were such that they could not sell them to the enemy. For instance, in April, 1944, General Eisenhower, as a result of advice by his psychological warfare staff, sent a paper to President Roosevelt which said, "We accept the policy of unconditional surrender, but we would like to be able to tell a German general in Normandy how he should surrender if he wants to." There was a curt message back via Stettinius that politics were to be left to the politicians. As a result, as we now know, generals who wanted to surrender were unable to do so. But we could not do anything about it. Policy is something which has nothing to do with the political warrior, except in so far as he can influence the Foreign Office to change it—which is not very often.

MAJOR C. PADDOCK: Mr. Crossman said that it is easier to tell the truth in time of defeat, and therefore I presume he would say that it is harder to tell the truth in time of victory. However, I should have thought it would have been the other way round. Would he care to enlarge on this?

THE LECTURER: I am sorry to have to say this to soldiers, but the curious fact is that in retreat you know how much ground you have lost, whereas an advancing army is rarely aware of where it has advanced to. Many of what were called Goebbels's lies—as we later discovered to our cost in the rapid advance in 1944—were simply due to the

fact that nobody knew where anybody had got to. It was a question of choosing the most optimistic report from the furthest advanced general. This is why it is easier to tell the truth about defeat than about victory.

DR. J. C. PENTON: I should like to ask Mr. Crossman whether he can say something about the methods that were used by the propaganda organization during the war to find out whether particular uses of propaganda had been successful.

THE LECTURER: I must say that I never thought much of the estimates that we made of the success of our own propaganda, because we were obviously biassed in favour of trying to prove that our propaganda was successful. I still think that it is not possible to make much more of an estimate than to give the percentage of prisoners who bring in leaflets. Actions always speak louder than words. You never know whether it is your propaganda or the defeat which the enemy has suffered which has demoralized him. All you can do with propaganda is make the snowball grow faster. I am therefore very sceptical about the estimates of those people who try to say how much good we did.

MAJOR JOHN NORTH: Would Mr. Crossman tell us whether or not he found the Allied demand for unconditional surrender an embarrassment in his work?

THE LECTURER: To start with, let me make it clear that the demand for unconditional surrender set us, as propagandists, a very difficult problem. Of course, in many ways the more difficult the problem, the more fun it is to solve it! I doubt whether any propagandists were ever set a tougher problem than to make unconditional surrender attractive to the Germans.

I would say that it postponed the end of the war by a year, because it prevented the military conspiracy of 20th July from being a success. But this had nothing to do with propaganda; it had to do with policy and the decisions of the opposition in Germany. One must therefore distinguish the policy consequences of unconditional surrender from the propaganda consequences.

From the point of view of propaganda to German soldiers, it had one advantage. The Germans had been told by Goebbels all about President Wilson and his promises. The policy of unconditional surrender prevented us from making any promises, which would not in any case have been believed. What, therefore, could we do if we could not make promises? We had to tell the truth and we had to issue instructions. During the last nine months of the war, we had the "Voice of S.H.A.E.F."—a series of instructions to German civilians on what to do as the occupying armies advanced into Germany. Into those instructions we managed to insert a whole mass of propaganda by referring to the restoration of trade unions and other things that would happen when Eisenhower came. These things were not said as promises but were given in the form of instructions to civilians facing the advancing, unconquerable general. To my mind, this type of propaganda was more effective, because the Germans were allergic to promises, but were susceptible to commands. Our propaganda was the propaganda of command and we tried in the course of it to give the impression that we were decent people, but we did not do this by making promises.

Therefore, I do not think that from the point of view of propaganda we lost; from the point of view of policy—which is a very different question—we lost a very great deal.

LIEUT.-GENERAL SIR GIFFARD MARTEL: Does Mr. Crossman know whether any propaganda is being done at the present time to the Russian peasants telling them that we are on their side?

THE LECTURER: You can only make propaganda to people if you can get at them. Probably on a Russian collective farm there is a collective wireless, but the peasants will not be allowed to listen to the B.B.C. There are probably a few individual peasants having wireless sets. But how many Russian peasants have *short-wave* sets? I do not know.

I think that our propaganda to Russia should be done on the supposition that we are talking to Communists. If you talk to the Russian peasant as though he is your friend

and is opposed to the regime, he may patriotically turn off his wireless because he is a *patriot* as well as a peasant.

I say that because I had a bitter experience with Germany. In 1939, I was one of the people who passionately believed that there was a big, good Germany that could be appealed to. I know there were many Germans who did not like the regime, but if you appealed to them as *traitors*, they did not take the propaganda. They were much more content to overhear you talking to a Nazi. If a democrat overheard you scoring off a Nazi he could enjoy it without feeling that he was a traitor, whereas if he heard you appealing to him direct, he often switched off his set.

We had a special analysis of German deserters made during the war. We wanted to discover what was the psychology of desertion. We found that there was practically no instance of desertion for ideological reasons. A good Communist in Germany was going to be a good soldier as well, and would not desert. Desertion was a psychiatric and not an ideological problem. My conclusion is that you have got to over-estimate the patriotism of the enemy in order to do good propaganda. To treat him as a potential traitor before your armies are actually approaching is to court disaster.

LIEUT.-GENERAL SIR GIFFARD MARTEL : I do not think that in the matter of radio propaganda there is a parallel between the German people and the Russian peasants. I should have thought the two were quite incomparable.

THE LECTURER : I do not pretend to know anything about the subject of Russia, but I do give the warning that even a peasant who is violently anti-regime will feel a sense of patriotism if he hears a violent propaganda broadcast from an enemy. There must be " market research " to find out the nature of the person to whom you are talking before you indulge in propaganda.

Of course, General Martel may be right, and I may be wrong ; but the real answer to the question is that it would not be right to put any propaganda to the Russian peasants without having a really objective intelligence study on the state of morale. If General Martel is right, then the morale has got to a lower state than I estimate—in which case, his technique is correct. But if that technique is applied before the morale has reached that very low stage, then the propaganda will boomerang and strengthen the regime.

LIEUT.-COLONEL F. H. LAKIN : In designing the propaganda programme, did you make use of sociological or anthropological studies of the peoples to whom the propaganda was addressed ?

THE LECTURER : We read everything that we could and tried to immerse ourselves in a study of Germany, not only by reading but by interrogating prisoners for hours and hours so as to get the lingo just right. No study of the enemy must be neglected which enables you to feel with him before you give him a hit !

CAPTAIN A. R. FARQUHAR, R.N. : Mr. Crossman mentioned the starting of rumours through monitored reports being shown to senior officers. May I ask him, first, whether there was ever any evidence that the high-up Germans were influenced in this way, and secondly has he any hopes of high-up commissars being influenced similarly ?

THE LECTURER : This is something that I cannot talk freely about, for these things are still relatively secret. I think that in terms of tactical propaganda (I am thinking of North Africa and of Rommel's staff, whom we captured and from whom we were able to discover on what they had based certain actions) there is no doubt that certain information which was meant for them got to them and that they acted in the way that we hoped they would on the basis of that information.

Another example on a bigger scale is the part which propaganda played in cover plans. Take, for instance, the elaborate propaganda campaign to suggest that we were going to have a second front in 1943. A lot of Frenchmen lost their lives as a result of it. It was a very cold-blooded attempt by propaganda and other means, physical as well as propaganda, to make it appear that this was the beginning of the real show. A number of German

divisions stayed in the West which would otherwise have moved; but I cannot tell you whether this was due to the propaganda alone or the other cover plan activities connected with the propaganda.

THE CHAIRMAN: I will not make any remarks about the lecture. The interest which it has aroused has been demonstrated by the questions that have been asked. Mr. Crossman has answered the questions as brilliantly as he lectured to us.

With regard to Russia, I should like to say that I think the problem is a different one, because the wireless sets are not there. I think that very probably the results that will be obtained will come from generals and higher bureaucrats listening in, and the effect will have to be a long-term one.

My task now is to ask you to give a very hearty vote of thanks to Mr. Crossman for the brilliant way he lectured to us and the admirable way in which he answered the questions. I think you will agree that what the Labour Party has gained by his going into Parliament, propaganda has lost. (*Applause.*)

GENERAL SIR FRANK SIMPSON: On behalf of the Royal United Service Institution, I should like to express our warm thanks to Sir Robert Bruce Lockhart for taking the chair. We have indeed been fortunate in having the war-time Director-General of the Political Warfare Executive in the chair at this lecture.

It is good to see such a large audience present, but I should like the chairman and the lecturer to know—if indeed they do not know already—that, good as this audience is, the lecture will reach a very much wider audience, for it will be published in the JOURNAL, which has a very large circulation among the officers of the three Services. A lecture of this sort is a little out of the ordinary line for Service officers, especially the more junior ones, and therefore it is all the more important that it should be brought to their attention.

I ask you to join with me in expressing thanks to Sir Robert Bruce Lockhart. (*Applause.*)

LONG-RANGE JET FLYING

By Squadron Leader A. E. Callard, D.F.C., A.F.C., A.R.Ae.S.

On Wednesday, 13th February, 1952, at 3 p.m.

Air Marshal Sir John N. Boothman, K.B.E., C.B., D.F.C., A.F.C., in the Chair.

The Chairman: Just about a year ago, a Canberra bomber took off from Northern Ireland, and 4 hours 40 minutes later landed in Newfoundland. The speed was the rather mediocre speed of 441 miles per hour—mediocre because, had it gone a little faster, the pilot could have beaten the sun; but he did not beat the sun on that occasion. It was Squadron Leader Callard and two others who took that machine over.

I can think of nothing more fitting than that Squadron Leader Callard should tell us about the operation of long-range turbo-jet aircraft.

I have great pleasure in calling upon Squadron Leader Callard to give his lecture.

LECTURE

THIS paper has been divided into three main parts in order to discuss the subject in convenient stages. Firstly, I shall outline the relationship of the various technical factors which govern the range performance of a turbo-jet aircraft. This is most easily done with the aid of graphs which have been prepared to show how the variables change one with another. Secondly, the limiting technical factors will be discussed and an attempt made to estimate what improvements in range performance may be expected from future developments. Finally, I wish to mention the most important operating problems which are beyond the control of engine and aeroplane designers and which place a large responsibility on the crew of a long-range turbo-jet aircraft.

It must be understood that this is a most formidable subject which, because of its many aspects, can be dealt with only sketchily in a paper of this kind.

The Turbo-Jet Engine

From a range flying point of view the efficiency of a turbo-jet engine is measured by its specific fuel consumption, which is the gross fuel consumption divided by the thrust. It is expressed in pounds of fuel per hour per pound of thrust.

The performance of the engine is dependent on four main variables:—

(*a*) Engine r.p.m.
(*b*) Forward speed of the aircraft.
(*c*) Atmospheric pressure.
(*d*) Atmospheric temperature.

In an ideal engine, when dividing the gross fuel consumption by the thrust throughout the r.p.m. range, the specific fuel consumption will be constant. Actually, the thermal efficiency is low at the lower r.p.m. and the efficiency of the compressor and turbine varies with r.p.m. as shown in Figure 1.[1] Specific fuel consumption is high at low r.p.m., indicating that fuel is being wasted because of the low thermal efficiency and the relative inefficiency of the compressor and turbine. For all practical purposes the best specific consumption is obtained between the peaks of the compressor and turbine efficiency curves.

Thrust is a function of the mass flow and the increase in the velocity of the gas stream passing through the engine. If we choose a certain r.p.m. and assume that

[1] Figures 1–12 and 15 face page 342.

the resulting jet stream is constant, the velocity of the gases through the engine, and therefore the thrust, will be greatest when the aircraft is stationary, because as the aircraft gains speed, its velocity must be subtracted from that of the jet stream. If the speed of the aircraft could be made equal to that of the gases passing through the engine, there would be no thrust produced since there would be no acceleration of the mass flow. In practice, the overall compression ratio increases with the speed of the aircraft because of the increasing dynamic air pressure or " ram " pressure in the air intake which tends to offset the loss of thrust with speed. Figure 2 shows that the ratio of actual thrust to sea level static thrust does not vary very much with the speed of the aircraft because of this increasing pressure.

Losses must be expected, however, when the intake velocity approaches that of sound, because energy will be taken from the air stream as shock waves form.

There is a noticeable loss of thrust as altitude increases which is due to the decreased density of the air. The compression ratio is unchanged, but the mass flow is proportional to the air density and therefore reduces as altitude is increased.

The rate of fuel flow to the engine is adjusted by a barometric pressure control which is sensitive to changes of air pressure in the engine nacelle. This control automatically increases the supply of fuel to maintain r.p.m. as the weight of air passing through the engine is increased by " ram " effect, and decreases the fuel flow in proportion to the lower atmospheric pressure at altitude.

Referring to Figure 3, it will be seen that the specific fuel consumption increases with speed for a given thrust because of this extra fuel which is required as " ram " pressure increases. At a given speed, however, the specific fuel consumption rapidly improves with the increasing values of thrust as the r.p.m. approach that required for the best efficiency of the engine. As the specific fuel consumption is the ratio of the thrust and fuel consumption, by definition, and the thrust decreases in proportion with decreasing atmospheric pressure, it should follow that the fuel consumption will decrease in a similar proportion. One would therefore expect the specific fuel consumption to be constant with increasing altitude. This would, in fact, be the case if the atmospheric temperature remained constant with altitude. However, the temperature decreases with altitude up to the tropopause, above which it is constant. Since the overall efficiency of the engine increases at lower air temperatures the specific fuel consumption decreases at altitude up to the tropopause, and in the constant temperature of the stratosphere the specific consumption is constant.

It can be seen from Figure 3(*c*) that the best specific fuel consumption is to be obtained at high altitude and a relatively low speed, but there is only a very small increase of specific consumption for a very material increase of speed at constant thrust. At 40,000 ft. at 200 m.p.h. at 500 lb. thrust, the fuel consumption is 450 lb./hour, or 2.75 lb./mile. At the same height and thrust at 450 m.p.h., the fuel consumption is 550 lb./hour or 1.02 lb./mile.

Considering the engine characteristics, the best specific air range will be at high values of thrust and speed, at high altitude and low temperature.

Above a certain height the turbo-jet loses efficiency when the mass flow is so much reduced that it becomes difficult to maintain proper combustion of fuel.

Aerodynamic Factors

I shall refer to two kinds of speed. The first is the airspeed, and is simply a measure of the airstream flowing past the aircraft. As the aircraft climbs into the less dense upper air its actual or true airspeed will increase for a given airspeed.

Figure 4 shows how drag varies with airspeed assuming air to be incompressible. Notice that there are two drag components, one known as induced drag and the other which is called the form or profile drag. Induced drag is mainly a function of the work done by the wings in deflecting the airstream to provide lift. It is the largest component at low speed where the angle of attack has to be much increased to maintain the lifting force. As lift is proportional to speed squared, the angle of attack required, and therefore the drag component, becomes rapidly smaller as speed increases. In fact, induced drag varies inversely as the square of the speed and directly as the square of the weight. The second drag component is itself proportional to airspeed and results from the shape and frontal area of the aircraft and the skin friction of the air moving over the wetted surfaces.

For a given airspeed the true speed will increase with height, whereas the drag increases only in proportion to the airspeed as illustrated in Figure 5.

It may seem, at first glance, that the maximum range will result when the aircraft is flown at the minimum drag speed which will require the minimum thrust. This is not actually the case, for the best range will be obtained when the ratio of drag and speed is at the minimum. A straight line drawn through the origin will be a line of drag/speed ratio. It will now easily be seen that the minimum value of drag/speed will be at the point where the line becomes a tangent to the drag curve. This is in fact about 1.3 times the speed for minimum drag. The minimum drag speed itself is the speed for maximum endurance.

Figure 7 illustrates that the best climbing speed of the aircraft will be that speed at which there is most power available over the power required.

One of the most unfortunate facts in aerodynamics is that air is not incompressible. Pressure waves, such as those caused by the movement from an aircraft, travel through the air at the speed of sound. At lower speeds, as the airstream moves round the aircraft, the pressure change that this causes can be detected some way ahead where the streamlines begin to diverge. At a faster speed the air is accelerated locally as it passes over the structure and it reaches the speed of sound. At that point a shock wave forms. Meanwhile, as speed increases, the main streamlines are diverging nearer and nearer to the aircraft and when it reaches the speed of sound it is obvious that there can be no pressure waves ahead of the aircraft at all and the streamlines are instantaneously compressed by impact. The airstream then becomes supersonic, causing a bow-shaped shock wave over the leading edges, and as it leaves the aircraft becomes subsonic again through another shock wave system at the trailing edges. The work done in producing these shock waves causes a most tremendous increase in drag. It is convenient, therefore, when referring to high speeds to relate the speed of the aircraft to the speed of sound as a percentage and this is known as the Mach number. From the aerodynamic point of view, therefore, an aircraft will give its best range performance at low all-up weight and at high altitude. Its best speed for maximum range is about 1.3 times the minimum drag speed, and it is clear that for the example in Figure 8 it would be uneconomical to cruise at much more than a Mach number of 0.7.

Having outlined very briefly the main factors from the engine and aerodynamic points of view we can now see from Figure 9 how they work out in practice in terms of specific air range, i.e. miles per gallon. This figure illustrates the range performance of an actual aircraft. From an engine performance point of view, the best air/miles per gallon would be expected at the particular r.p.m. where the specific consumption

is lowest, and one would expect the shape of the curves to reflect that shown in Figure 1. However, at the highest speeds which are obtained at high power the drag of the aircraft increases, as we have seen from Figure 8, and it is this factor which causes the loss of range. The curves for 25,000 ft. and 40,000 ft. illustrate very well the practical effects of the increasing drag due to a high Mach number.

It can easily be seen that if we wish to improve range performance we must improve both the specific fuel consumption and reduce the drag at high Mach numbers. Since induced drag and therefore weight is quite important at the minimum drag speed ratio, it is very desirable that these improvements do not involve an increase in the all-up weight of the aircraft.

Turbo-Jet Engine Development

As the turbine and compressor efficiencies of a modern turbo-jet engine are already about the 90 per cent. mark, there seems to be very little scope to improve the specific fuel consumption from that aspect. From Figure 11 it will be seen that there is a direct relationship between specific fuel consumption and a turbine inlet temperature. It appears that substantial gains are possible if the turbine inlet temperature can be increased. However, this temperature is limited by the inability of the highly stressed turbine blades and the guide vanes to withstand higher working temperatures. Although new alloys will undoubtedly be developed, a further examination of Figure 11 will show that there is a relationship between this temperature and the specific thrust and compressor temperature rise (or compressor ratio). Each specific thrust curve reaches a peak as the compressor temperature rise increases from zero. This maximum must occur before the specific fuel consumption reaches a minimum. Therefore there must always be a compromise between maximum output and minimum specific fuel consumption.

It seems extremely unlikely that the specific fuel consumption of the simple turbo-jet will be improved much below 0.85 lb. of fuel per lb. of thrust per hour in the static thrust at sea level case, or much below 1.24 lb. per lb. of thrust per hour at Mach 0.85 at altitude.

It is also unlikely that this specific weight will be decreased much below 0.3 lb. per lb. of thrust. This will represent only a very small percentage of decrease in the all-up weight of the aircraft and the resulting gain in range would therefore be small.

If we consider an axial compressor type of engine and from the first stage of compression by-pass some air directly into the jet pipe, there would be a significant increase in the mass flow through the engine. This would also reduce the specific fuel consumption, since no extra fuel would be consumed as this air would not pass through the combustion chambers and the turbine. There would be a small increase in specific weight and the velocity of the jet stream would be reduced, thereby reducing the ratio of jet stream velocity to aircraft velocity.

Figure 12 shows the relative advantage of this type of engine over a normal piston engine and propeller combination, the pure turbo-jet, and the rocket.

It is unlikely that this engine will have a specific consumption much less than 0.7 lb. per lb. of thrust per hour in the static thrust sea level case, or 1.2 lb. per lb. of thrust per hour at 0.85 Mach at altitude.

It must be remembered that there is a price to be paid for high speed and the following simple comparison may help to keep the factors in perspective :—

	M.P.H.	*B.H.P.*	*Thrust*	*Engine* Wt. (lb.)	*Fuel Consumption* lb./bh.p/hr.	lb./hr.	lb./hr./lb. *thrust*
Piston engine ...	600	8,000	4,000	16,000	0·5	4,000	1·0
Turbo-jet ...	600	8,000	4,000	2,340	0·66	5,300	1·6

(This table is published by the kind permission of Rolls Royce Ltd.)

In this table various simplifying assumptions are made which are, in fact, unfair to the turbo-jet engine. It is clear, then, that our tribute to the turbo-jet engine must not be a grudging one.

Airframe Development

There is no obvious way to improve by very much more than 15–20 per cent. the economy of turbo-jet engines, but it may be possible to increase the range performance of turbo-jet aircraft by reducing the drag. This, of course, will have the effect of either decreasing the thrust required and therefore the fuel required per mile, or increasing the speed for the same thrust and thus fly for a greater distance for the same amount of fuel.

In the case of the theoretical example illustrated in Figure 8 it can be seen that if we wish to increase the speed from 600 to 800 miles per hour, that is 30 per cent., we would require about seven times the thrust. It would clearly be very expensive in fuel to cruise such an aircraft at that speed. In fact, as stated previously in this particular example, it would probably not pay to cruise at a Mach number of much more than 0.7, or about 450 m.p.h. There are various ways in which the drag can be reduced and they will now be outlined briefly.

It has been found that the skin friction drag of an aircraft can be very much reduced if the airflow at the skin can be kept smooth or laminar. What happens is that air in contact with the skin loses speed relative to the main airstream around the aircraft, and the boundary layer therefore decomposes into a complex turbulence causing an increase in drag. This turbulence could be prevented if the boundary layer could be made to accelerate as it moves over the structure which, in fact, it ought to do until it reaches the region of maximum structural thickness. As the structure becomes thinner further aft, the boundary layer is caused to decelerate and it is there that the turbulence becomes troublesome. The boundary layer can also become turbulent anywhere if the surface is at all rough, or at high Mach numbers if the skin is even slightly wavy. Tests show that it is important to keep the surface discontinuity down to less than 0.0005 inch. It is difficult to see how this high standard of surface finish can be achieved and maintained over a period of time on an aircraft in service, or even after take-off and during flight, because it only needs a squashed fly to cause quite an alarming wake of boundary layer turbulence.

Another solution is the removal altogether of the turbulent boundary layer by means of carefully placed suction slots on the wings and fuselage. This is difficult to do without becoming involved in a loss of range due to the increase in weight which this system would entail.

Figures 13 and 14 are photographs of a wing treated with a substance which evaporates. The process of evaporation speeds up in the conditions of boundary

layer turbulence, and the difference in texture between these regions and the others where the evaporation rate is normal can be seen. To illustrate how important this matter is: on an aircraft of the Brabazon type, for example, enough fuel would be saved if laminar flow could be preserved up to 50 per cent. of the chord of the wings to enable the payload to be almost doubled for the design range. With a flying wing layout this gain will be increased by a further 50 per cent.

By using very thin wings and swept-back wings it is possible to reduce somewhat the drag rise at high Mach numbers. This is shown in Figure 15. Even so, the increase in drag is still very great being, at Mach 1.3, 20 times what it was at Mach 0.7. From our knowledge of aircraft structures it is likely that the use of these very thin wings would also result in a substantial weight penalty.

We must not forget that the fuselage itself accounts for a very large increment of the total drag, and to some extent the same principle for reducing wing drag at higher Mach numbers applies. The fineness ratio is the ratio of length to diameter, and if it is to be doubled for the same frontal area, say from 5.5 to 11, the drag at Mach numbers between 1.2 and 1.4 could be halved. This would be at the expense of some increase in drag at subsonic speeds.

At supersonic speeds all will not be well with the engine, as mentioned earlier, since shock waves will establish themselves in the air intake and there must be an increase on this account in the specific fuel consumption.

Although there is no doubt that we shall see our turbo-jet aircraft designed for higher and higher speeds, which as we have seen means lower frontal areas, thinner and swept-back wings, and thinner and longer fuselages, it will be clear that this can only be at the expense of fewer miles per gallon.

In fact, all things considered, there are no good prospects of relatively economical range performances much faster than Mach 0.9.

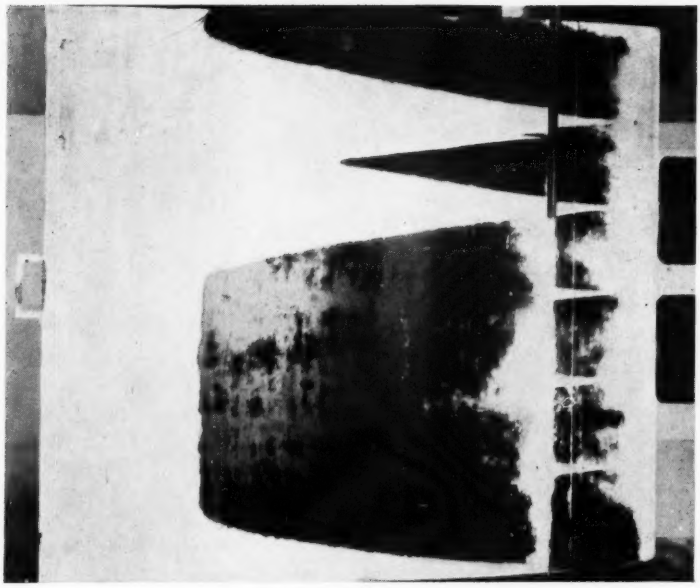
Ideal Design

A turbo-jet aircraft designed for best long-range performance would require engines carefully matched to the airframe so that at its cruising power ceiling its cruising airspeed would be approximately 1.3 times its minimum drag speed, this being at a Mach number which would not involve too great a drag penalty. In such an aircraft the change in weight during the sortie would be important, for at constant cruising r.p.m. and altitude the speed would increase as the weight reduced. To maintain the correct air speed the aircraft would have to climb which would mean that the Mach number would increase. To throttle back the engines would involve an increase in specific fuel consumption, and to stop an engine would mean a significant loss in altitude with again an increase in specific consumption, to say nothing of the increase in drag from the dead engine. The designer cannot, therefore, choose a particular cruising altitude but must work out the best compromise of all the factors.

As a matter of interest we would very likely find that this aircraft will be underpowered at the take-off and would require some form of thrust booster to shorten the take-off run and also perhaps to improve the rate of climb to the initial cruising height.

Operating Problems

When we come to operate a long-range turbo-jet aircraft we find that the crew are up against great difficulties because of important factors which are unknown before flight. Although turbo-jet engines are very reliable the effects of an engine



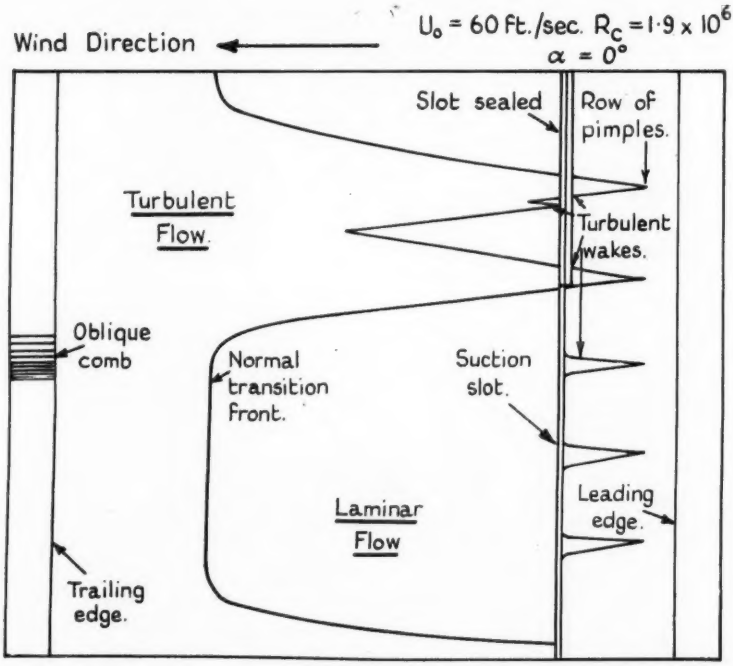


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FIG. 13

RE-ESTABLISHMENT OF LAMINAR FLOW BY BOUNDARY-LAYER SUCTION AT A SLOT, VISUALIZED BY THE CHINA CLAY TECHNIQUE

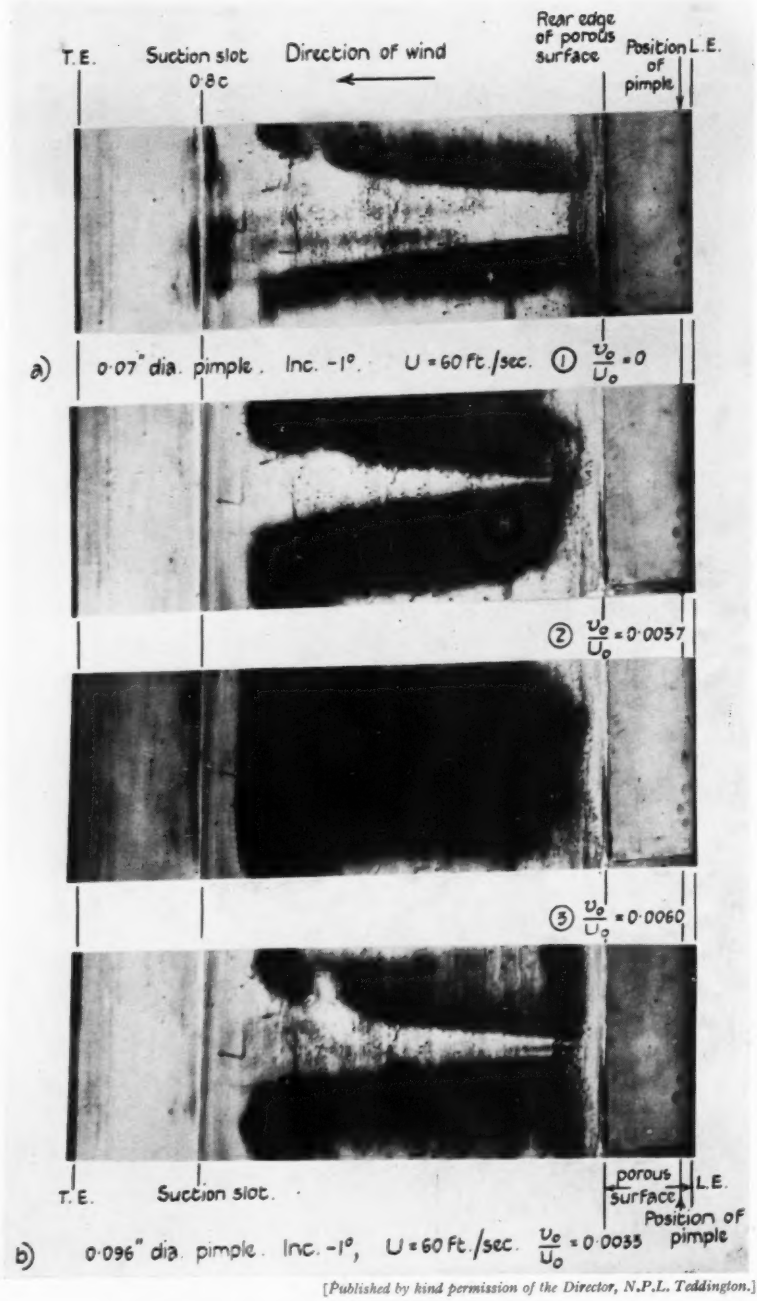
T.E.
Suction slot 0·8c
Direction of wind
Rear edge of porous surface
Position of pimple
L.E.
a) 0·07" dia. pimple. Inc. -1°. U = 60 ft./sec. ① $\frac{v_o}{U_o}$ = 0
② $\frac{v_o}{U_o}$ = 0·0057
③ $\frac{v_o}{U_o}$ = 0·0060
T.E.
Suction slot.
porous surface
L.E.
Position of pimple
b) 0·096" dia. pimple. Inc. -1°, U = 60 ft./sec. $\frac{v_o}{U_o}$ = 0·0035

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FIG. 14

EFFECT OF DISTRIBUTED SUCTION ON WAKES PRODUCED BY EXCRESCENCES ON A POROUS SURFACE

failure on range performance can be very significant. On a four-engined aircraft we would expect a loss of about 25 per cent. and considerably more on a twin-engined aircraft. This, as we have seen, results from the loss of height and the higher specific consumption at the lower altitude. The loss of height is not instantaneous, however, but a gradual process which has been pleasantly called " drift down " by B.O.A.C.'s Comet crews. During this gradual descent a very useful distance can be covered and the net loss in range materially reduced depending on the flight distance. It would clearly be bad judgment not to allow in the flight plan for this contingency.

Very likely the cruising height range is above that at which human beings can live, even breathing pure oxygen. In this event a pressurized cabin would be provided, but should this system fail altitude would have to be lost very rapidly to ensure survival. This, of course, would result in an immediate loss of range, but one would, I think, be justified in making no separate provision in the flight plan for this very unlikely occurrence in jet transport aircraft.

It is probably appropriate to make the point here that fuel reserves must be calculated intelligently, because it requires fuel to carry the weight of a fuel reserve. For this reason it would be bad judgment to fly with too much fuel.

The remaining and most worrying problem is our inability before flight to guarantee our position in space after a given time from take-off, if we cruise for best range performance. This is because the wind speeds and temperatures at the altitudes for the flight are not exactly known. Measurements show that these upper wind speeds can be very considerable indeed, that is between 100 and 200 m.p.h., and although it is likely before flight that recent and accurate measurements will be available, not enough is known about the cause of these winds to allow accurate forecasts of their change in speed and direction to be made. Whereas it may be justifiable to allow no fuel reserve for engine failure or cabin pressure failure, it will clearly be folly not to allow a fuel reserve for changes in wind velocity and air temperatures.

In an ideal case it would be possible to operate a long-range turbo-jet aircraft so as to arrive quite safely at one's destination with just sufficient fuel remaining to allow for taxying around the airfield. This could be achieved if the crew could be assured beforehand that there would be no mechanical failures of any kind and if they could be informed before the flight of the precise wind velocities and air temperatures at known altitudes along the route. They would also have to know that the Air Traffic Control at the destination could accept their landing time without having to queue. It is a great pity, especially in view of the truly enormous efforts of aircraft and engine designers to achieve good range performance, that we have to fly with a reserve of fuel in hand. Mechanically our aircraft are very reliable and all that remains is to have a knowledge of the meteorological factors to make usable the very large percentage of our fuel capacity which must now be held in reserve for the unknown.

Everyone accepts that the frontal theory is sound, but very little is known at the moment of what I will call the dynamics of weather—that is, why the weather systems speed up or slow down or change direction. It is clear also that we shall have to increase very much our knowledge of the upper atmosphere before we get the best range performance out of our aircraft.

Conclusions

To sum up, we have seen that a long-range turbo-jet aircraft to achieve best range performance has to fly high, has to keep its weight down to the minimum and cruise at such a speed that the Mach number is not too high.

There is no obvious way by which the fuel consumption of turbo-jet aircraft can be decreased beyond a certain point, but it seems very likely that improvements in aerodynamic design, such as thinner and swept-back wings, thinner fuselages and boundary layer control, could make a very large contribution to range performance in the future. A considerable gain in range performance will also be available to us when it becomes possible to guarantee absolutely what the wind velocities and air temperatures are going to be en route. This must be coupled with improved Air Traffic Control so that at no time will an aircraft have to wait in a queue before it is allowed to land.

ACKNOWLEDGMENTS

I wish to thank the staffs of the Empire Test Pilots' School, The Royal Aircraft Establishment, The National Gas Turbine Establishment, and Power Jets (Research and Development) Ltd., for the help given in preparing the paper and producing the graphs.

I am also indebted to Rolls Royce Ltd., the Director of the National Physical Laboratory, and the Royal Aeronautical Society for the use, with their kind permission, of information previously published.[2]

DISCUSSION

FLIGHT LIEUTENANT A. D. DICK: Can the lecturer tell us from his experience of the Canberra what sort of temperature changes he encountered in the stratosphere and what the symptoms were?

THE LECTURER: I cannot remember the exact temperatures, except that the temperature we encountered on the latter part of the flight was considerably lower than that for the standard atmosphere. The effect was that, because of the lower temperature, the air at a given pressure altitude was more dense, and that increased the mass flow of air through the engines and therefore the thrust, and enabled the aircraft to fly at a greater altitude. There is a material gain in range when that occurs. We therefore arrived at Gander with more fuel than we had thought we would have on arrival. On the other hand, if temperature had been higher, we would have arrived with less fuel.

I must point out in fairness to my meteorological friends that the weather forecasts were extremely accurate for the wind velocities, but we all know of occasions when the forecast wind velocities are not accurate at all.

MR. F. C. WATTS: I should like to ask how much of the theory which the lecturer has given us this afternoon he is actually able to use in flight. What material does he carry with him in order to be able rapidly to change plan according to circumstances?

THE LECTURER: The best that we can do at the moment is to find out for ourselves in flight what is happening to wind velocities and air temperatures. But my point is that it is already too late in flight to have the information. The biggest responsibility that the captain has to bear, I think, is how much fuel shall he allow for a particular flight, not knowing precisely what the various meteorological factors are. It is bad judg-

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[2]REFERENCES

A Review of Aerodynamic Cleanness, by E. J. Richards, M.A., A.F.R.Ae.S. Published by the Royal Aeronautical Society.

Jet Propulsion, from a lecture by H. Pearson, Esq., Rolls Royce Ltd.

Jet Propulsion—Service Experience and Research, from a lecture by L. G. Dawson, Esq., Rolls Royce Ltd.

Problems of Transonic Flight, by A. N. Clifton, B.Sc., F.R.Ae.S. Published by the Royal Aeronautical Society.

ment to fly with too much fuel, because fuel is required to carry fuel, and you are putting up the weight of the aircraft unnecessarily if you carry too large a reserve.

If it is possible to give the crew the information which I have outlined before they take off, if you can give them the assurance that they will not have occasion to land before getting to their destination, and that if the weather is bad they can do a blind landing, then, having the knowledge of the factors affecting range performance, there is nothing to stop them calculating their fuel requirements to a nicety—that is, cutting down what is at the moment a very heavy reserve.

MR. P. A. HEARNE: I believe that until fairly recently 1.31 minimum drag speed was considered to be the best speed for a turbo-jet aircraft flying for optimum range. Recently I saw a paper proving 1.19V_{md} was the best speed and I would be interested to know the lecturer's opinion.

With regard to high air temperatures in flight, it is possible to show theoretically that with an aircraft flying on the Mach drag-rise an increase in temperature will cause a decrease in Mach number with a considerably larger decrease in drag than in thrust and there will be an increase in performance.

I would also ask the lecturer whether he has a definite opinion as to the stage of the flight at which diversion should take place. Does he think a pilot should descend to circuit height at the destination before diverting, or should he accept the ground controller's decision and divert at altitude with the consequent saving in fuel reserves?

THE LECTURER: To reply to the last question first, I think that in jet flying you must allow in your flight plan much more carefully for diversions than we have done with piston-engined aeroplanes, and it must be clearly set down in the flight plan beyond which point it does not pay to divert. I think we shall get a race of grey-haired pilots because of this! The time flits by and it becomes obvious to the crew that diversions beyond a certain point are not going to pay them or they might not have enough reserve to get there, and the only airfield left is the destination. If that situation is very likely to arise, all you can do is to allow in the flight plan an even bigger reserve of fuel. That brings out clearly the point about knowing beforehand what you have to do.

On the question about 1.19 times the minimum drag speed being the best for a cruising climb, I have not seen the paper to which the questioner referred, and I cannot see for the moment what advantage there is in that, because I think that in the actual cruising case it is obvious you must fly at a ratio where drag is at a minimum with speed, and that must occur where the tangent through the origin which I showed you on the Figure becomes a tangent to the drag curve. That must be the point where drag is at a minimum and speed is at a maximum, and that must be the best speed for long-range flying.

There is a lot of compromising to do, but it has always seemed to me that the best way to climb up is to get there as quickly as you can and to cover the maximum distance while you are doing it. There again, it seems to me that the best speed to choose is the one at which there is a maximum excess of power available over power required. I cannot say that it will not vary from aeroplane to aeroplane, for it might well do so, but I think that theoretically it must be the best climbing speed. To have an excess of power available over the power required gives you a very useful cruising speed, and you can cover quite a lot of distance while climbing. I should be glad to read the paper to which the questioner referred if he will give me the reference.

On the other question, I cannot see that the performance of the aircraft would actually increase, because if you are going to heat the air going into the engine you are decreasing its density and decreasing the mass flow through the engine. So it seems to me that the thrust must therefore decrease.

MR. P. A. HEARNE: Yes, it must decrease, but not so much as the drag.

THE LECTURER: The rate of decrease of thrust is not so great as the rate of increase of the drag—is not that a case of two variables diverging less rapidly, but still diverging?

GROUP CAPTAIN S. W. R. HUGHES: Has the lecturer in his research come across any detailed information about the problem of "holding" jet aircraft? It is possible that a cleaner aeroplane, like the Comet, in a conventional traffic holding pattern, provided that the holding time at the various assigned altitudes is not more than five minutes, should be able, by picking up speed given to it during descent by its clean lines, to hold on comparable terms with a piston-engined aeroplane. Can the lecturer amplify this?

THE LECTURER: It might well be, but I did make the point earlier that the consumption of fuel by a jet engine in gallons per hour, even when idling, is considerably more than that of the piston-engined aeroplane, and I doubt very much whether a jet aircraft could queue up on equal terms with a piston-engined aeroplane for much longer than the time specified by the questioner. It is quite true, of course, that when you throttle back a clean aeroplane, it will maintain by its own inertia its speed for a longer period of time than in the case of a propeller driven aeroplane where you have the enormous drag of the idling propellers to cope with. But we must not be satisfied with our present traffic control systems. We must not accept queueing up to land. If we can cruise our aeroplane in a precise manner by foreknowledge, we ought to be able to give to our terminal airfield a most accurate time of arrival and there should be no excuse for queueing up if that can be done.

FLIGHT LIEUTENANT A. D. DICK: Could the lecturer say whether at these altitudes for maximum range with present aircraft one gets tied up with the manœuvre boundary?

THE LECTURER: It is quite true that the higher you go, the less manœuvrability you have available; but I have confined my lecture purely to the long-range aspect, and unless we have to do complicated traffic patterns which involve doing complex manœuvres while getting to the destination, I do not see that the problem arises.

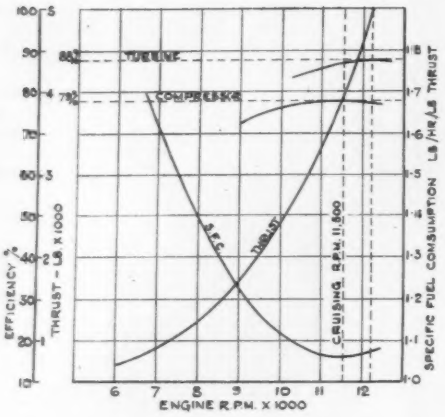
The ideal flight plan I have in mind is a rapid climb on course from the departure airfield, and a planned descent to the destination circuit, or else one can probably so adjust one's arrival direction to coincide with the runway in use and flop right in. We want to avoid this business of circling round airfields and wasting fuel.

THE CHAIRMAN: If there are no more questions, it falls to me to do two things—first, to sum up, and, secondly, to thank the lecturer. I think the summing up really is that the jet is here to stay. We have got it; we cannot get away from it. It is an inflexible thing, and we have not got the chance of altering our flight plans as we had with the piston engine.

The other thing is that unquestionably our training cannot be wasted on producing pilots and crews who have got to make up their minds in flight. Everything has got to depend on pre-flight planning. There is far too much work to do in the time available to be able to think in terms of going into the air with thousands of graphs, which you can do in the long-range commercial aircraft but not with our degree of training.

I wish to offer our thanks to Squadron Leader Callard for his excellent lecture, which it must have been quite an ordeal for him to give. (*Applause.*)

AIR VICE-MARSHAL MCEVOY: May I say how fortunate we have been to have Air Marshal Sir John Boothman in the Chair this afternoon? He is Controller of Supplies (Air) at the Ministry of Supply, and he knows as much about high speed flying as most people, having been a Schneider Trophy winner; and he continues to fly all the latest jets and Deltas as they come out. I think he is the prototype of the race of grey-haired pilots to which the lecturer referred! I am sure you would wish me to say how glad we have been to have him with us this afternoon. (*Applause.*)



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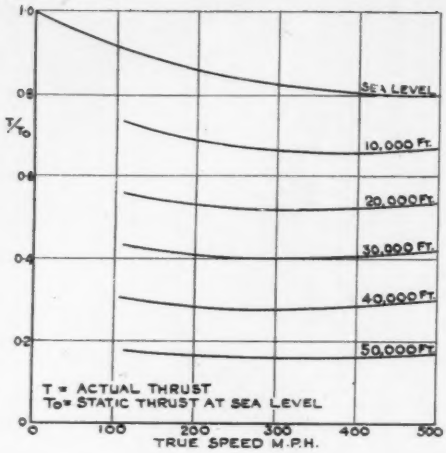

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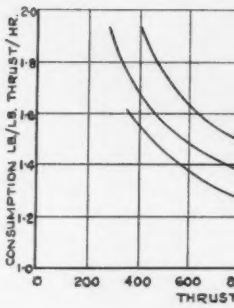

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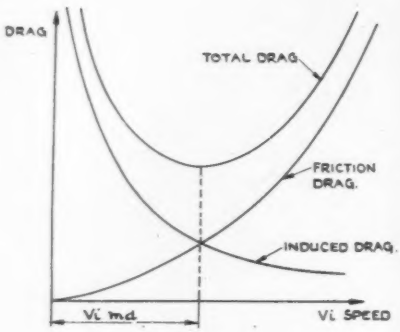

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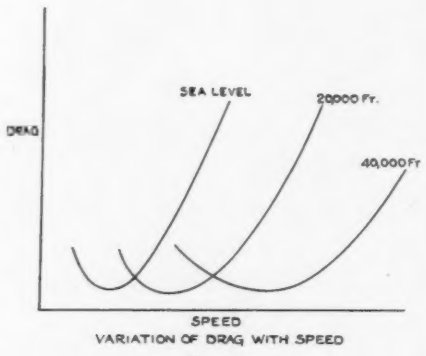

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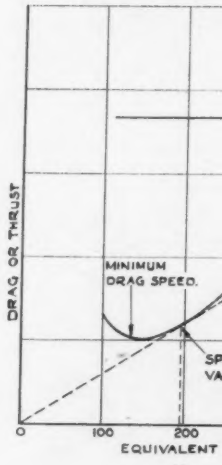

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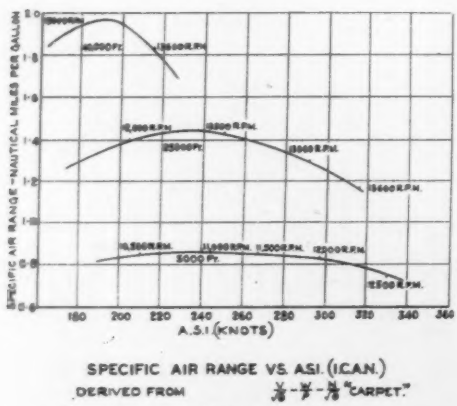

SPECIFIC AIR RANGE VS. A.S.I. (I.C.A.N.)
DERIVED FROM 1/8 - 1/2 - 7/8 "CARPET."

FIG. 9

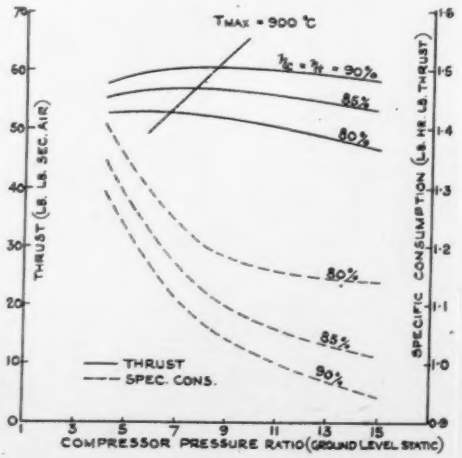

FIG. 10

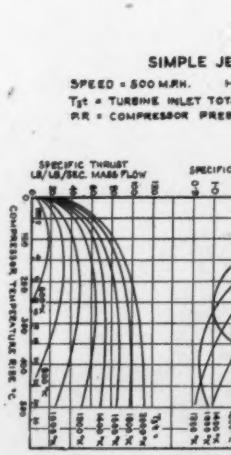

FIG. 1

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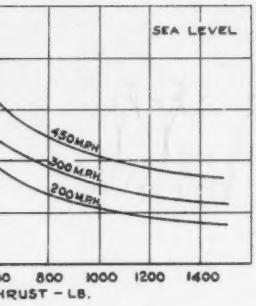
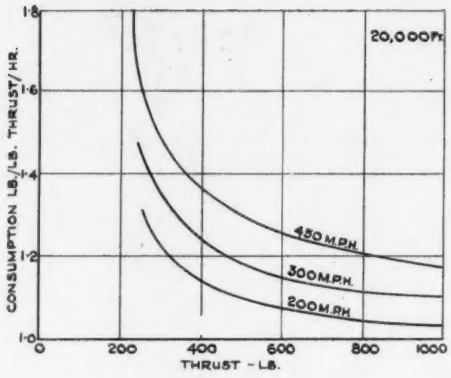


FIG. 3 (a)



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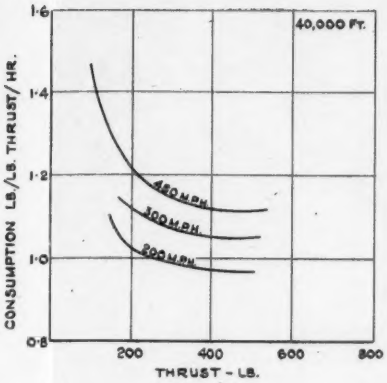

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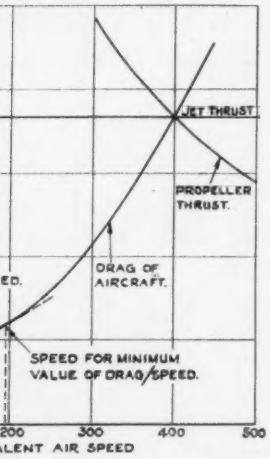

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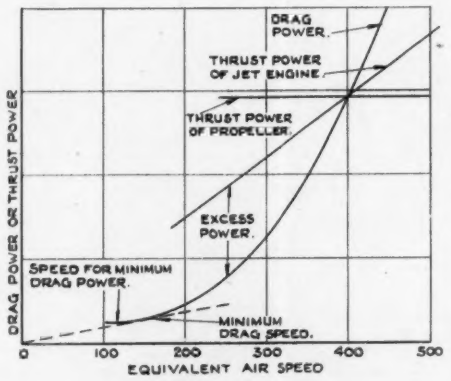

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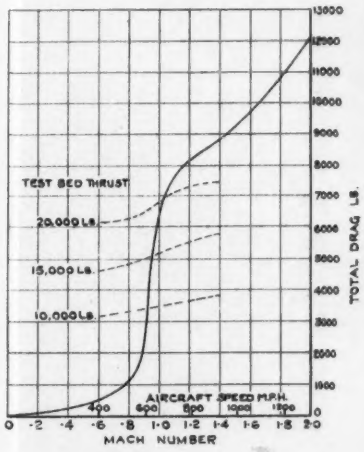

FIG. 8

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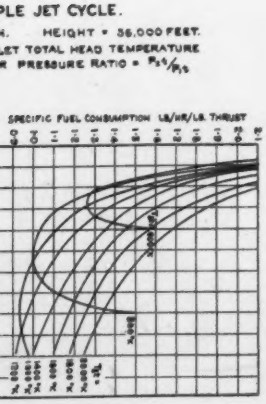
PLE JET CYCLE.
HEIGHT = 36,000 FEET.
JET TOTAL HEAD TEMPERATURE
R PRESSURE RATIO = P3/P2
SPECIFIC FUEL CONSUMPTION LB/HR/LB. THRUST

FIG. 11

of the National Gas Turbine Establishment.]

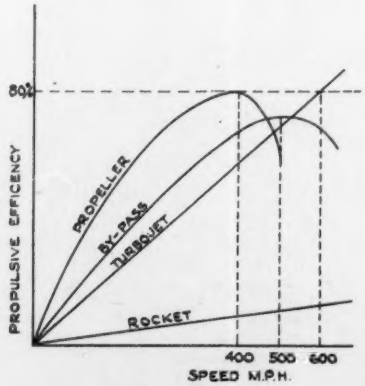

FIG. 12

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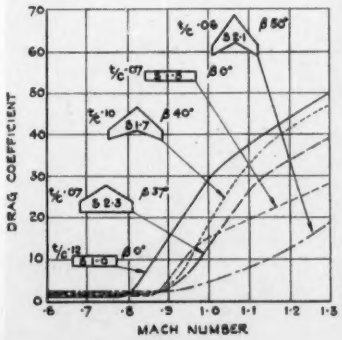

FIG. 15

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YUGOSLAVIA

By Mr. FITZROY MACLEAN, C.B.E., M.P.

On Wednesday, 27th February, 1952, at 3 p.m.

FIELD-MARSHAL THE LORD WILSON OF LIBYA, G.C.B., G.B.E., D.S.O., in the Chair.

THE CHAIRMAN: We are very lucky to have with us this afternoon Mr. Fitzroy Maclean, who is going to talk to us about Yugoslavia.

I feel that so many of you have read his book " Eastern Approaches " that, if I were to say much in introducing him to you this afternoon, my remarks would be merely repetitive. No one in this Country knows more about Yugoslavia than he does; he fought in, marched in, and dropped into that country many times during the war. He had great contacts with Marshal Tito, and since the end of the war he has had a good deal to do with the repatriation of displaced persons. Recently, about two years ago, he visited Belgrade and renewed his old contacts with the Yugoslavs.

This afternoon he is not going to dwell so much on the past as to picture to you the impact of Yugoslavia in relation to Russia.

LECTURE

I AM not going to relate all my remarks today to the subject of Yugoslavia, because I think that, on the whole, the problem of Yugoslavia is more interesting if it is considered in connection with the main problem which faces us today, that is, the problem of Russia. I think that is the true importance of what has happened recently in Yugoslavia. I shall therefore try to fit that into the general picture, and I shall confine my remarks on the actual subject of Yugoslavia to the latter part of what I have to say to you.

But before I start, I should like to tell you something which does concern Yugoslavia directly, and that is a little story about the first meeting between our Chairman, Field-Marshal Lord Wilson, and Marshal Tito. I shall never forget it. I had brought Marshal Tito over from Yugoslavia in an aeroplane. He had not been out of that country or near civilization for many years; he had been living entirely in the forests, and the last time he had been in civilization he had been wanted by the police. This was, therefore, a very great occasion. The Field-Marshal had asked him to lunch, and I accompanied him.

When we got to the mess, which was quite a small room, with space for about six or eight people to sit down round the table, we noticed that Marshal Tito still had with him his bodyguards, his faithful bodyguards who had protected him all through the fighting in the woods. They were two enormous partisans with tommy guns. When we got to the door of the dining room, it was a question of what was to happen about the bodyguards. Sure enough, they pushed their way in, too. We sat down to lunch. One of the bodyguards held Tito's hat, which was a most magnificent creation, and the other kept the Field-Marshal covered with the tommy gun—a good start to the lunch! Tito had a very large dog, a wolfhound, which settled down under the table. I knew it to be a dog of uncertain temper and I did not feel very happy about it. There was an Italian mess waiter, who was a little bit nervous—as Italians sometimes are. When he saw that formidable-looking man with the tommy gun he was so frightened that he dropped a large dish of green peas with a bang on to the top of the table. Of course, the dog, who had gone to sleep under the table, woke up and started snapping at everyone's ankles; the man with

the tommy gun thought that a bomb had been thrown ; his trigger finger twitched—and I think the Field-Marshal had a very narrow escape indeed ! Fortunately, with his usual good humour, he managed to carry the situation off, and—to do him justice—Tito joined in the laughter just as gaily as did anybody else. That was the first official contact between Marshal Tito and the outside world.

To return to the more serious subject of the present situation, one of the disagreeable things about living at the present time—and, as you know, there are plenty—is that you never know what is going to happen next. Somebody is always liable to spring something on you unexpectedly, and usually it is something disagreeable. It used to be Hitler, and now it is Stalin—to leave aside, for the moment, my right hon. friend the Chancellor of the Exchequer, who has no doubt got some surprises for us up his sleeve.

Now, that is not really a very happy frame of mind to be in—always wondering what somebody is going to do to you. So one of the things that I want to try to do today is to give you some idea of the way in which Stalin's mind works, to tell you what makes him and his friends in the Kremlin act in the way they do, and how they are likely to act in the future. Another thing I want to do is to make a few suggestions about what I think we ought to do, and how we ought to set out to deal with Russia ; because (and I need not say this to an audience that is so versed in the art of war) there is nothing worse than letting the other chap have the initiative all the time. What we want is to get the initiative, so that Stalin is sometimes kept guessing what we are going to do next, instead of its being always the other way round.

As you know, there is a lot of talk about what is called the " Soviet enigma "—the " mystery of the Kremlin." Well, I have had quite a lot to do with the Russians, in one way or another. I spent two or three years in Russia before the war and I have had quite a lot of dealings with them and with Communists in general since, and I think that all this talk of mystery, and so on, is pure nonsense. To my mind, it is quite clear what the Russians want. There is no mystery about it at all. They have said it themselves over and over again. Lenin has said it, Stalin has said it. What they want to do is to dominate the whole world. You may call it world revolution, if you like, or you may call it Russian imperialism—it makes very little difference. What it comes to is that they believe that they are right and that everybody else is wrong, and their object is to impose their rule, their system of government and their way of life on the whole world. That is the end which they pursue, and they will make use of any means whatsoever to achieve it. They believe that the end justifies the means.

Let me now quote to you something which illustrates my meaning, something which Lenin wrote to a friend of his, Maxim Gorki, the writer :—

> " It would not matter one jot if three-quarters of the human race perished. The important thing is that the remaining quarter should be Communists."

That illustrates better than anything I can say the Russian approach to all problems, human, political, and economic. They do not believe in arguing with their opponents, with people who disagree with them ; they believe in wiping them out.

This idea that they have got to impose their rule on the rest of the world means that their policy is basically expansionist. It means that their object must be to spread. It also means that their policy is basically antagonistic to what they call the capitalist world. Now, some of you may wonder whether you are capitalists. I know that when I look at my bank balance I very often do ! But you need not worry,

because when the Russians talk about capitalists they simply mean someone who is not one of them. Sometimes they call them capitalists, sometimes fascists, and sometimes even ruder things ; but whatever the Russians call them, it always comes to the same thing and means anybody who does not think as they do. Therefore, when they are basically antagonistic to the capitalist world, it means that they are basically antagonistic to every one of us, and that their aim is our destruction and the destruction of our way of life.

Of course, we are not going to allow ourselves to be eaten up by Stalin any more than we allowed ourselves to be eaten up by Napoleon or Hitler or any other of the people who have tried to do it ; and nor, of course, are our Allies, the Americans and the rest. You may ask, does that mean that war is inevitable ? Does that mean that there is one great force which is determined to destroy the other and another great force which is determined not to be destroyed ? Does that mean that there is bound to be a clash ? Does it mean that war is inevitable and is only a question of time ? I think not. I think that war is not necessarily inevitable. I think we may very well have war, and we may very well have war within the next 12 months, but I do not think it is inevitable. I do not think it is bound to come. Indeed, whether it comes or not depends very largely on us.

First of all, in considering this whole problem, you have to remember that there is a fundamental difference between Hitler and Stalin, and, by extension, between the two systems. There is a difference in character between the two men and between the two systems. There is nothing of the mad dog about Stalin. Stalin is a cautious realist ; he is a man who bides his time, a man who does not take chances, a man who bets only on certainties. Do not run away with the idea that I am saying that he is a nice man. I do not think that at all. I think he is cruel, cold-blooded, calculating, ruthless, and utterly unscrupulous. But he is not the sort of man who flies into blind rages and bites the carpet. He is not what you might call a carpet chewer. That makes a very big difference indeed when you are dealing with him. He wants to destroy us, but he does not want to destroy himself and his system in the process.

Stalin's policy is first and foremost a long-term policy. He hopes (and it is a fundamental tenet of Soviet doctrine) that in the long run he will get everything he wants anyway. He believes that the democratic system, the capitalist system—whatever you like to call it—carries in it the seeds of its own destruction. He believes that it is doomed to disaster, and that at the most the Communists will have to deliver the *coup de grâce* at the last moment. Now, believing that, Stalin is not going to risk losing everything that he has gained up to date simply in the hope of accelerating what he regards as an inevitable process.

In the old days, there used to be a certain amount of discussion about Soviet aims and Soviet policy. They used to talk these things over among themselves. But for the last twenty years or so there has been precious little discussion. Stalin has simply laid down the line and the others have followed. I think one can say that by now all Communist policy, all Soviet policy (of course, it is the same thing, for the Communists everywhere are nothing more than the agents of Moscow) is subordinated to three main aims.

The first is the concentration and maintenance of power in the hands of Stalin himself. The second is the building up of the military and economic strength of the Soviet Union. The third is the extension of Soviet influence and, where possible, Soviet authority—Soviet rule—beyond the frontiers of the Soviet Union.

These three aims are pursued by all possible means, subject only to one condition, that nothing is undertaken in pursuit of either of the two latter aims (the building up of the strength of the Soviet Union and the extension of that strength beyond the frontiers of Russia) that could possibly in the slightest degree interfere with or prejudice the first aim—the concentration and maintenance of power in Stalin's own hands. Stalin is not going to take any chances at all about that. He would rather see his country weakened, he would rather see his country miss all sorts of opportunities, than allow his own power inside his country to be weakened in the slightest degree. The best proof that you can have of that is the punishing he gave his army, his navy, his air force, the whole of industry, the administration, and so forth, a couple of years before the war, when it was quite clear that a European war was impending.

If you go to Moscow, one of the things that you will be taken to see is Lenin. They have Lenin in a glass case. You go down into something rather like an underground station, which is very nicely done up with polished marble and indirect lighting, and there, with a couple of sentries on guard, is Lenin in a glass case. You are hurried down, you take a quick look at him, and then you go out by another way. Lenin is in a remarkably good state of preservation. You see him there, with his little beard and his head lying on a cushion, and he is looking up at you with a slightly sardonic smile on his face.

I am told that one of the reasons Lenin is in such a good state of preservation is that his little glass case is hermetically sealed. I am told that if you were to take half a brick and smash the glass, Lenin would very soon disintegrate. I do not know whether that is true, but it certainly is a parallel which applies to the whole Soviet system.

One of the reasons this system has lasted as long as it has done is that it is hermetically sealed, it is kept from all contact with the outside world. Practically speaking, no Russians can get out of Russia and no foreigners—or so few as to make no difference—can get into Russia. It is because they have no standard of comparison, because they know nothing of the outside world or of any other system, that the Russians put up with this terrible tyranny to which they are subjected.

If, so to speak, you were to take half a brick and smash that glass, and let in some fresh air, then you might very well see the whole system melt away. And, of course, in a war there would be a very considerable likelihood of that happening. It happened to some extent during the last war, and it had a very unsettling effect on the population. The only reason it did not have a more unsettling effect was that the invaders were the Nazis and the air which they brought in with them was just about as foetid and nasty as the air inside already, and very soon the population came to the conclusion that they had not much to gain by a change. At the same time, there is no doubt that many hundreds of thousands of Russians did go over to the Germans at the first opportunity, and far more would have gone over if the Germans had behaved better and treated them a bit better.

If we know that, of course Stalin knows it, too. He knows that he really cannot count on his own people. And he can count on them much less in an offensive war than in a defensive war, which is why I think that he will risk a war only if he feels certain of a quick, easy victory. In short, he will only risk a war if he feels certain that the balance of power is sufficiently in his favour. That being so, our job is quite clear. We have got to make quite sure that he does not reach that conclusion. We, the democratic world, have got to see that we are stronger and that we stay stronger.

Not long ago I was talking to a high-level Moscow-trained Communist, a man who knows what he is talking about—Marshal Tito. He said this: "Never forget that there is only one argument that the Russians understand, and that is strength. Strength is the only thing that will deter them. In Western armed strength lies the only hope of avoiding a third world war." And I am quite sure that he is right. That is the only way in which we can avoid war.

We shall not be safe until we have a proper security system. Of course, today, in the Atlantic Pact, we have got the beginnings of a security system, but to do any good a security system must fulfil two conditions: first, it must be backed by adequate armed strength; and secondly, it must be world-wide. If you are going to meet a world menace, you must have a world-wide security system, a system which covers all the areas threatened by Soviet aggression. Of course, the defence of the West is vital and we all agree that it must be the top priority, but it is not everything. The outlook for democracy would be pretty poor if the whole of Asia were to be under Communist domination. Lenin—who still sets the line for a great deal of Soviet policy—was convinced that if Asia could be won over to Communism, it would only be a question of time before the rest of the world went the same way. "The road from Moscow to Berlin, Paris, and London," he wrote, "lies through Peking, Shanghai, and Calcutta." Perhaps when he wrote that twenty-five years ago people did not realize what he meant. Now it is much clearer. "Asia," he once said, "is the backdoor to the capitalist and imperialist Powers."

Though, of course, the defence of the West must have top priority, it cannot be considered in isolation from the defence of all the other parts of the world that are threatened by Soviet aggression. It is no good barricading the front door if you leave the back door wide open. Already the whole of China, with its immense resources, its population of 500 million, has gone. The rest of Asia, the Middle East, and the Near East are in a ferment today, and, with their low standards of living, their immense illiterate population and vague nationalist stirrings, they are far more vulnerable to Soviet Communist penetration than is Europe.

At the present time, there can be no doubt that our weakness in that vital strategic area of the Middle East and the Far East invites a Russian attack. If we are not going to court disaster, we must have a security system extending to the Near and Middle East and also to South-East Asia and the Pacific. It is only by a system of regional pacts on the lines of the Atlantic Pact, covering all the areas threatened by Soviet aggression, that we can hope to make the world a safe place to live in.

Is such an attitude on our part likely to provoke war? On the contrary, the danger lies in encouraging Stalin to think we will put up with anything. Stalin is unprovokable, he does not fly into a rage, he works things out coldly and calmly. The danger does not lie in provoking him but in encouraging him to believe that there is no limit to our patience. The danger is that Stalin will think that we do not really mean business, that he will go too far and try something that we will not put up with, and that then we shall drift into a war, as we did last time.

But there is another aspect of the situation. Even assuming that, by a vigorous and positive policy of the sort that we are pursuing today, a world conflagration can be avoided, can we look forward to a more promising future than a perpetual armed truce, an indefinite prolongation of the cold war? Here, I think, is where Tito and Yugoslavia come in. A revolutionary movement, like Soviet Communism, if it is continually held in check—and from now onwards it is going to be held in check—is bound sooner or later to undergo a transformation. If the principle that the end

justifies the means is constantly applied over a long enough period, there is a strong probability that sooner or later the means will obscure and stultify the end; people will lose sight of the end and forget what they are trying to do. Already there is no doubt that the constant *volte-face*, the utter cynicism of Stalin and of Stalin's Communism, have alienated many of its most fervent admirers. You have only to think of the number of people in this Country who at different times have been pro-Soviet and who now regard the whole thing with disgust.

In recent years, and particularly since the war, Communism has drawn its recruits not so much from the ranks of the natural revolutionaries as from the yes-men and the people who like to be on the winning side, people who, in a troubled and bewildering world, prefer to have their minds made up for them and to lie back on a cushion of infallible dogma backed by irresistible force. So long as a movement of that kind is on the upgrade, such a following will increase, but once the tide turns, once things start to go badly, inevitably there will be a falling off.

So, if it is going to carry conviction, Soviet Communism has got to produce concrete evidence of its own power and success and of the weakness and failure of its adversaries. It cannot stand still, it must either advance or fall back behind the hermetically sealed frontiers of Soviet Russia, the original country of the revolution. The Soviet system, based on the supreme and absolute and infallible authority of the Kremlin, must either maintain its supremacy over its satellites, if necessary by force, or lose them, and perhaps very soon lose control altogether. And, where one has gone, others may follow.

That is the importance of Yugoslavia. The Soviet system is based on authority, and for four years now Tito has been publicly and openly defying that authority. There has been a great deal of argument about the exact causes of the dispute between Moscow and Belgrade; but what really matters is that there should have been a dispute at all. Of course, the defection of Yugoslavia from the Communist *bloc* has had an important effect strategically. It has blown an enormous hole in the Soviet position in South-East Europe. But the political and ideological effect is much more important. The fact that one Soviet satellite has managed to break away is vitally important.

As we in the West get stronger and Russia gets proportionately weaker, it is possible that other countries may feel tempted to follow Tito's example, and that is why it is so essential to us that Tito should survive. We are not particularly interested in trying to make a Western democrat of him. What we are interested in is to show that it is possible for a country to split away from the Soviet Union and stay split. If, of course, the Russians were to manage to steam-roller Yugoslavia back into submission and we did nothing to stop it, it would be a warning to everybody else not to do the same thing as Yugoslavia has done. But if Tito gets away with it, it will be an encouragement to other satellites to do the same.

We stand at the present time at a crisis in our affairs, a crisis comparable to that which we faced in 1940. The problem, in the ultimate analysis, is one of power; and here, thanks to the Western lead in atomic warfare, I think one can say that we have probably got a slight advantage.

If, through inertia or lack of conviction, we throw away our advantage, if by our weakness we encourage our opponents in their belief that our way of life is doomed to decay, if we disappoint those people all over the world who are looking to us for a lead, then it is hard to see what can prevent the continued advance of Soviet power and the ultimate triumph of Soviet Communism throughout the world. But if, on

the other hand, we maintain our advantage, and consolidate it, and exploit it boldly, if we have confidence in ourselves and can inspire confidence in others, then I think that we shall be able, not only to surmount the present crisis, but even to achieve within our lifetime some measure of security and stability in the world.

DISCUSSION

FLYING OFFICER C. S. LIPSTEIN: The lecturer stressed that one of the main differences between ourselves and the Russians is that the Russians think that the end justifies the means. Does he not think that that argument is rather a two-edged sword? After all, the West is quite happy, it seems, to use dictators like Tito and presumably, in time, Franco. That might seem to be rather cynical to some people. I do not say that we should not use Tito and Franco, but in that case is it not a case of the end justifying the means?

THE LECTURER: That is a very good point, and also a rather tricky one! The question of the end justifying the means is a philosophical proposition which one could go on arguing indefinitely. I do not say that you should never apply the expedient that the end justifies the means, and I do not think anybody would say so; but, if you carry it too far, the means are liable to obscure the end. I think that to some extent that has happened in Russia already.

I think that that is something which is only likely to happen in a dictatorship and that it is not something which happens in a democracy. It is only when there is a maniac with an obsession at the top that that sort of thing can reach extreme proportions.

On the question of how far we ought to go in letting the end justify the means and in applying that axiom to our conduct, it is hard to give an answer. For instance, I think that in allying ourselves with the Russians in the last war (quite rightly, for it was a question of survival and that was why we allied ourselves with them and they with us) the end justified the means—although, as we have seen since, it has led to some very awkward problems.

I think that we should cultivate friendly relations with both Tito and Franco, although I am sure they would both be very offended to hear me speaking of them in the same breath. But, after all, in dealing with them, one has to remember that the fundamental and most objectionable thing about German Nazism and Stalinist Communism is that they were not content to keep their systems to themselves but tried to impose them on the rest of the world. When that happens and when one Power, with one man at the head of it, tries to impose its rule on the whole of the rest of the world, that is something that we cannot stand at any price. To do them justice, neither Franco nor Tito has tried to do that. Of course, Franco was objectionable when he was a potential ally of Hitler and Mussolini. In the same way, Tito was objectionable when he was a potential ally of Stalin. Now that they have ceased to be that, for one reason or another, I do not think that the same considerations apply. We can only hope that by force of example, by association with the West, they may shed some of their more objectionable habits and become rather worthier members of the community.

So far as Yugoslavia is concerned, there are two things that must be said to her credit. One is that she is a small country which put up a magnificent fight for her national independence against the Germans. The other is that she has done the same thing against the Russians. On two occasions in a dozen years she has put up that magnificent fight for her national independence, and I think that is something that should be borne in mind in considering the situation.

LIEUT.-COLONEL C. E. PIERSON: I believe that in both world wars very successful steps were taken in shutting up people who were definitely anti-British, whether by nationality or by their records. The decisions seem to be less easy when Communism is now so general. There are now some very high officials who profess a strong form of Communism. Does the lecturer think that we have now got the situation as well in hand

and that all these people have been marked down, or can they plead mitigation by saying that they are not the harsh brand of Communists but the nice Tito kind? Is not the situation somewhat risky?

THE LECTURER: That question comes rather near to being a political question which I, as a politician, must avoid in this non-political meeting, but I can say this: I think that in this Country, a free country, one thing of which we have to be very careful in dealing with the Soviet Communist menace is not to let ourselves be infected by the totalitarian virus. When you are dealing with Communists, or with Fascists, it is a great temptation to resort to political trials and political repression. Then, before you know where you are, your policy has become much too much like their policy.

. However, I think there is one criterion. I think it is a bad thing to persecute people for ideas which they hold, but if anybody has unhealthy ideas I think it is necessary to keep fairly close tabs on them and, in the case of anybody who occupies any official position, to see what his antecedents are and to examine his attitude towards life fairly carefully before he is given a responsible job.

As to what one does to people who take what one might call a treasonable line, I think that is quite clear—one runs them in for treason. In war-time, of course, it is much easier to do that because the Government then have much wider powers. But in peace-time, too, treason is a punishable offence.

What we must try to avoid is to make people more interesting and more attractive by making martyrs of them. For instance, I believe that at present the circulation of the *Daily Worker*, the organ of the official Communist Party of Great Britain, is going steadily down. But, if the Government were to ban it, that is the one thing that might make people want to read it, in spite of its being so intolerably boring.

As the questioner said, quite rightly, this shifting of loyalties, the fact that so many people admitting loyalty not to their country but to some sort of ideology, does put the Government in an awkward position, and they have to watch out for trouble in all sorts of unexpected places.

LIEUT.-COLONEL C. GARSIA: I should like to put a point concerning strategy in the Balkans. Turkey and Greece have joined N.A.T.O. and Yugoslavia is being rearmed. There is talk of a Balkan Pact between Turkey, Greece, and Yugoslavia.

I should like to suggest that geographical factors rather make nonsense of such a pact. One has to consider the position of those countries in the event of a war. Would not any combination between them be impracticable? For instance, the Yugoslav forces would, I presume, be forced to retire into the Bosnian mountains as they would be attacked from three sides, while the Greek forces would be pushed back on their own country. The present connection between Greece and Turkey, via eastern Macedonia, would undoubtedly be cut, and the Turks would be fully occupied in defending their own country. The Russians would certainly send forces into the Balkans. Would not the war have to be fought by forces geographically separated by many hundreds of miles? I should like to ask the lecturer whether he thinks there is any prospect of anything else happening.

THE LECTURER: I think the point which has been put to me is a very valid one. Roughly, it is this: What would be likely to happen if the Russians were to attack through the Balkans? Might not Turkey, Greece, and Yugoslavia be separated? Might not thrusts come down between them, one thrust down to the sea at Salonika through Bulgaria, cutting off Yugoslavia to all intents and purposes from Greece and Greece from Turkey? That might well happen.

Let me say, first, that I have no doubt that it would be useful if there were some sort of Balkan Pact between Greece, Yugoslavia, and Turkey, and between Yugoslavia and Italy. Of course, there are still, to some extent, political difficulties, and it will be some time before relations between Greece and Yugoslavia, on the one hand, and Yugoslavia and Italy, on the other, are very close—but they get closer all the time. Relations between both countries and Turkey are also improving steadily.

After all, self-interest is a very important factor in these things, and there is no doubt that it is to the interest of all three countries to get together. I think that if they were to get together and to have staff conversations (which the Greeks and Turks are having, since they are members of the Atlantic Pact), it would be extremely useful, and with luck they should be able to make preparations to hold up a Russian thrust coming from Bulgaria. Of course, it would depend very much upon the strength with which the Red Army attacked. It would also depend very much on what help we and the Americans could give to those countries. That, of course, is the thing which would interest them very much. The Red Army has got 200 divisions, 20,000 aircraft and 20,000 tanks. If they were able to concentrate a high proportion of their forces upon an invasion of the Balkans, I suppose that the invasion would be very largely irresistible; and Tito and his forces might be forced to fall back into the mountains and hold out there, and the Greeks might have to do the same.

But it must be remembered that the Turks, the Yugoslavs, and the Greeks, although they have small countries, have pretty good armies; they are not as well equipped as they might be, but they are very well trained and they have very good fighting material. The Balkans is a place, as the Germans found out to their cost in the last war, where a Regular army can get bogged down very easily. Tito managed to contain upwards of a dozen German divisions for the best part of three years in Yugoslavia; and if the Russians were to try to take Greece and Turkey at the same time, it might absorb a very considerable part of their forces. If, on the other hand, they did not attack in very great strength, they might find that they would not get very much farther.

One can only see what happens if the situation arises—and let us hope that it does not. But one thing I am sure of—that the sooner there are staff conversations between those three countries and the Western countries, and the sooner we make it clear what help we can give in the event of war, the better it will be and, incidentally, the less likely will be the Russians to attack.

THE CHAIRMAN: I should like to put a question arising out of the last question. Those having some experience or knowledge of the Balkans and Yugoslavia are always apt to look upon Yugoslavia as a country of internal strife—religious, political, racial, and almost tribal. I should like to ask how far Tito has managed to iron out those troubles so that at present Yugoslavia has a united front.

I should also like to ask how Tito looks upon Albania. Does he rather regard it as being something in the nature of a boil in a rather awkward place?

THE LECTURER: I will deal first with the question concerning internal difficulties in Yugoslavia. One of the basic facts about Yugoslavia is that it is made up of half a dozen slightly different nationalities. If one goes back to A.D. 600 or 700, they were all South Slavs, but owing to some of them later being under Austrian rule and some under Turkish rule, they grew apart and got different religions, and so on. And, in the past, there has been extremely bitter strife between them.

How far has Tito coped with that problem? I think that he has made a certain amount of progress, and I think that the reason he has been able to make that progress is that he has never favoured one of those nationalities more than he has another. He has never favoured the Serbs more than the Croats, or the Croats more than the Slovenes. He himself is a Croat with a Slovenian mother, and the men around him are very largely Serbs. That has been so throughout his whole partisan resistance movement.

What I think has united the people in Yugoslavia more than anything else is the fact that in the partisan forces for three and a half years they were all mixed up together and fought side by side—which they had never done before. In the 1914-18 War, Yugoslavia did not exist; there was Serbia, and many of the Croats and Slovenes were fighting in the Austrian Army on the other side. In the 1939-45 War, for the first time, there was a national army with Serbs and Croats fighting together in the same units. This has undoubtedly forged very strong bonds between them.

Since the war, Tito has reorganized Yugoslavia on a federal basis, so that there are six semi-autonomous republics joined up in one Federal Republic of Yugoslavia. At the present time the tendency is towards decentralization, so that the power is taken away from the central authority in Yugoslavia and more and more independence is given to the republics. That is a healthy tendency.

I think that if Tito and his regime survive for another ten or twenty years, the national differences may be forgotten to a very large extent and there will be a much greater degree of unity than has existed before in Yugoslavia.

As to the other aspects of internal strife, of course the fact remains that many people in Yugoslavia do not like Tito's present regime. But you should remember that many of the people who oppose it do so because they are anti-Communist. At the moment, the choice for them lies between Tito's present regime and a Russian regime, and that they would dislike very much more than they dislike the present regime. Therefore, many of the people whom one would expect to oppose Tito have been won over to his side by the Russian action. Instead of weakening Tito, the action of the Russians in denouncing him as a Fascist beast, and so on, has strengthened his political position inside the country. The Yugoslav Communists, whom one might well have expected to follow Stalin rather than Tito, have not done so; their loyalty has been to their war-time leader rather than to the Kremlin, to Tito rather than to Moscow; and there have been surprisingly few defections. The Russians have so far met with practically no success in stirring up trouble for Tito internally. On the whole, his position is fairly strong, and the fact that he is now getting economic and other help from the West tends to make him more popular than he would be otherwise.

As to Albania, I think that the Field-Marshal's description of it as a boil in a rather awkward place is very apt; I think that is how Tito regards it; as a boil which sooner or later can be got rid of. The people who are really in the awkward position are the Albanians, because they are completely cut off from any other Communist country. The Russians can only communicate with them by sea or air. The Albanians have on the one side Greece, who hates them, and on the other side Yugoslavia, who hates them even more. What is more, the Communist regime is extremely unpopular with most of the population and appears, from some of the trials that have taken place, to be riddled with Titoism. On the whole, therefore, the people in the awkward situation are the Albanians.

MAJOR M. C. SANDS: I should like to ask what the lecturer thinks is likely to happen on the death of Stalin, who is a fairly elderly man and is not immortal. It would be interesting to hear who the lecturer thinks is likely to follow Stalin, and whether there is likely to be a struggle for power among the lesser lights.

THE LECTURER: That question is a fascinating one. Of course, the question of what is likely to happen on the death of Stalin is one to which everybody, including no doubt Stalin himself, would like to know the answer.

I should perhaps say that Stalin does come from Georgia, where people eat yoghourt in great quantities and live for a long time! His mother died only recently as an old lady of 100 or so, and many people in that part of the world live to be 150. Stalin is only 70, so we may have him for another 80 years.

What will happen when he dies? I think that the most likely thing is that there will be a relatively tranquil transfer of power to somebody else. I imagine that there is a successor already appointed. I believe that the one whom everybody is putting their money on at the moment is Malenkov, who is a high member of the Politbureau. I should think that the most likely thing is that he will take over and that things will go on very much the same as they are now. The regime has been going on in Russia for over thirty years, and they are running pretty well on fixed lines. I think it most likely that on Stalin's death Malenkov would become Prime Minister, Secretary-General of the Party, and that things would go on much as now. That is the most likely possibility.

It is, of course, possible that there might be a struggle for the succession. But, even supposing that there were a struggle for the succession, I still believe that things would go relatively smoothly, and that we in the outside world would not really notice very much. Russia is pretty well shut off from the outside world, and the Kremlin is shut off from Russia to an extent one would hardly believe possible. The creatures that live inside the Kremlin hardly ever appear in public—once or twice a year at the outside. When they go out to their country houses, they go in a fleet of bullet-proof cars the blinds of which are drawn, so that nobody knows whether they are empty or whether there is somebody inside them. Although there are no doubt a lot of stresses and strains and intrigues going on in the Kremlin, one knows very little about them.

At school we are told about stars that are so many millions of miles away that it is quite possible that they may have gone out at the time of the Battle of Hastings and that we still see their light. In the same way, it is possible that Stalin has already been dead for months, and that those concerned have not yet decided what to do or say.

My own view is that if there were any doubt as to the succession, the most likely thing is that they would put Stalin on ice, figuratively and literally, and then make up their minds what was going to happen next; and no doubt in the end one, two, or three of the candidates would fall out of windows or die of appendicitis and the survivor would take over. Then you would read in the newspapers that Stalin had died; there would be a nice funeral; and he would be succeeded by Marshal So-and-So or Mr. So-and So. I think that even if there were a conflict over the succession, we on the outside would in all probability not know anything about it.

Another possibility is that things might go very wrong indeed. In that event, of course, anything might happen. There was a possibility of that immediately after the war. At that time the victorious marshals were coming back at the head of their armies—armies which owed their loyalty to their military commanders. If one of those marshals had taken it into his head to march on Moscow and liquidate Stalin, he might quite well have got away with it and there might have been a very formidable explosion. But the first thing that Stalin did after the war was to switch those marshals round—send some off to places to which they had never been before, and shoot a few—and generally bring the situation back under control.

The position now is that really nobody except Stalin and one or two of the ballerinas in the Soviet State Ballet have got any personal following in the country at all. There is no sort of faction for this man or that man, and that is why any revolution, as far as one can see, would have to be a palace revolution inside the Kremlin, of which the outside world would know nothing.

Of course, if a situation were to arise in which large masses of Russians were involved on one side or the other, then I think that in a matter of weeks or days one might see a return to the kind of chaos there was in 1917. But in peace-time, at any rate, I do not personally see that happening.

THE CHAIRMAN: We have had a most interesting lecture and a splendid discussion. Time is getting on, and Mr. Maclean has now to go to the House. So I must bring this pleasant meeting to a close, and it only remains for me, on your behalf, to thank him very much for coming here this afternoon. (*Applause.*)

THE LECTURER: Thank you for listening so kindly to what I have had to say and also for the interesting questions that you have asked. I am sure that I am voicing all your feelings when I thank our Chairman very much for so kindly presiding over our meeting. It has been a great pleasure to me personally to have had him to take the Chair for me, having served for many years under his command during the war. (*Applause.*)

THE MEDICAL PROBLEMS OF ATOMIC, BIOLOGICAL, AND CHEMICAL WARFARE

By Brigadier A. Sachs, C.B.E., M.D., M.Sc., Q.H.P.

THROUGHOUT history developments in weapons of destruction have continued to set new medical problems, and it seems likely that this may have occurred even in primitive times. Prior to the introduction of the spear, early man was acquainted only with contused injuries resulting from the blows from a club, and a new medical problem was to deal with the deep lacerated wounds caused by the spear. Later, with the advent of fire-arms, removal of deep-seated bullets and shell splinters became, and even to-day may still be, a difficult problem. The results of the launching of gas warfare in the 1914–18 War on the unsuspecting Allies illustrates the consequences and chaos caused by the absence of adequate preparations for defence against new weapons and for treatment of the resulting casualties. The introduction to atomic warfare by the bursting of the atom bombs over Hiroshima and Nagasaki again serves as an example of the results of this unreadiness.

The weapons used in modern scientific warfare aim at mass destruction, and have created medical problems of a magnitude never previously visualized. It is problematical whether these weapons of mass destruction will in fact be used in the face of the many so-called humanitarian, ethical, and moral objections which have been raised, or, if used against a well prepared nation, whether much success could be accomplished in the presence of adequate defensive methods. The strategic use of modern weapons was surveyed by Dr. O. H. Wansborough-Jones, when he addressed the Royal United Service Institution on 15th February, 1950, on " Present Science and Future Strategy."[1]

The medical side of defence in a future war will affect the well being, morale, and possibly even the survival of a nation. If the medical resources of the Country are to be effective there must be full co-ordination between the medical services of Civil Defence and of the Armed Forces. This consideration forms an integral part of planning. It is of the greatest importance that a correct appreciation should be made of the many and various medical problems which are likely to arise when considering defence against special weapons, in order that there is no wastage of medical man-power or medical equipment and drugs.

Civil Defence planning before the onset of hostilities must aim at minimizing the effects of modern warfare on the civil population. As a preliminary, arrangements should be made to reduce the number of individuals who may be potential casualties in target areas. One method is that used in the last war—the selective evacuation of mothers and children and others whose presence would not be essential to the national effort. By long term planning for the dispersal of industries, a further reduction in population densities can be ensured. A firm policy regarding shelters and methods of warning will also help to reduce the number of casualties.

In this paper it is proposed to deal with the medical problems arising from atomic, biological, and chemical warfare ; the so-called A, B, C warfare.

Atomic Warfare

The most obvious targets for an attack with atomic bombs are key cities of strategic and industrial importance which are vital to the national effort. Much of

[1] See Journal for August, 1950, p. 405.

the data available on the effects of atom bomb explosions have been derived from the attacks on Hiroshima and Nagasaki and various trials carried out by the United States in certain islands in the Pacific. Owing to the difference in the structure of buildings it is not possible to apply the Japanese experience directly to any European city.

It is well known that when an atomic bomb explodes, energy liberated in the form of blast, heat, and radio-activity is capable of causing death or injury to the population, structural damage, and contamination of water and food supplies.

The problems facing the medical services after an atom bomb explosion are associated with the treatment of large numbers of injured and with the prevention of further casualties from residual radiation and contaminated food and water supplies. People in a city may be killed or injured by (1) the direct effects of blast, (2) secondary effects of blast due to flying debris and shattered glass, (3) flash burns, (4) secondary fires, and (5) radio-activity—either the penetrating gamma rays and neutrons liberated at the time of the explosion or the residual radiation remaining afterwards on the ground and in any contaminated food and water supplies.

When British cities were attacked with high explosives and incendiary bombs during the last war, the medical services had to deal with injuries caused both by the direct and secondary effects of blast and burns resulting from fires. After an atom bomb explosion the actual injuries will present no new problems in treatment except when complicated by radiation effects : the new problem will be the magnitude of the numbers of casualties. Some idea of the size of the surgical task facing the medical services can be gathered from the fact that, during the last war, it was shown that it is humanly impossible for one surgical team to carry out more than twelve major operations in twenty-four hours. It would therefore require eighty-four teams to deal in twenty-four hours with a thousand serious casualties requiring urgent operations. This will necessitate the availability of teams fully equipped with instruments, dressings, splints, and drugs, which in itself creates a considerable planning problem.

Flash burns occurring at the time of the explosion are peculiar to atomic warfare and were extremely common in the exposed population in Japan. These burns are due to thermal radiation ranging from infra-red to ultra-violet rays acting over an extremely brief period of time. If the entire population has taken cover in houses or in shelters before the bomb is released, they should be protected and flash burns should be rare. With an exposed population like that of Hiroshima and Nagasaki, or an army in the field, the circumstances will be different and flash burns are likely to predominate over other types of injury.

The effects of thermal radiation will depend on distances from the centre of the explosion, protection afforded by shielding and clothing, and atmospheric conditions. In Japan flash burns occurred within a radius of 4,000 yards. Those within 1,000 yards radius of the centre of the explosion were so severely burned that the majority died from their injuries. Beyond 3,000 yards, however, the effects of thermal radiation were mild, the injuries on the exposed parts resembling severe sunburn. Between these two distances burns of varying degrees of severity were encountered. Since flash burns occurred only on the surface facing the detonation, shielding and shading by structures afforded protection and reduced the number of casualties. At distances greater than 1,500 yards, loose fitting, light-coloured clothing seemed to afford some protection. Mild cases can be prevented by wearing gloves and by covering the face

and other exposed parts before the explosion. The minor traumatic injuries and mild burns will outnumber the serious casualties. Skilled medical attention is unlikely to be available for some time to treat these mild cases, since all medical personnel will be fully occupied in dealing with the more seriously injured. It is therefore evident that there must be some system of mutual help and first-aid. This stresses the importance of the necessity for training the civil population in first-aid or at least in its rudiments. A civil population so trained will do much to alleviate the pressure on what will be an overworked and harassed medical service.

Radiation injuries are also peculiar to the atom bomb explosion. There has in the past been a tendency to emphasize unduly the importance of the casualties occurring from radiation injury. Although from the serious nature of the injury sustained, the group is undoubtedly important, numerically its importance is less than that of casualties from the mechanical and thermal effects of the explosion; the relative proportion being 20 per cent. from radiation and 80 per cent. from mechanical and thermal injuries combined.

Medical science has long been familiar with the effect of the localized use of radiation for the treatment of cancer, but not with the effects of radiation on the whole body. The clinical effects resulting from radiation depend on the dosage received at the time of the explosion. It is most important that an assessment should be made at the earliest opportunity as to whether individuals have been exposed to radiation and, if exposed, the probable dosage received, in order to separate radiation casualties from others. Attempts to separate the population into these categories may be based on (1) the distance from the explosion, (2) readings from personal monitoring instruments, and (3) symptoms. Each of these three methods has its disadvantage. The absence of knowledge of the amount of shielding, the size of the bomb, the height of the burst, and the effect of terrain and buildings will preclude an accurate assessment based on distance. The personal dosimeter may give a fallacious reading when part of the body is shielded or the dosimeter shielded and the body exposed. An assessment of symptoms is not perfect, as the susceptibility of individuals varies. It was found in the Japanese cases that an early onset of the characteristic symptoms was indicative of exposure to a high dose of radiation. Those whose symptoms developed late were generally assumed to have received a smaller dosage. Indeed it came to be realized that the earlier the onset of symptoms the worse the chances of recovery.

For convenience patients have been grouped into three main categories, viz. :—

(1) *Those receiving a lethal dose of radiation.* In such cases, severe vomiting and diarrhœa came on within 1 to 3 hours and fever and marked wasting developed within one week, by the end of which time the majority had died, though some survived for as long as two weeks.

(2) *Those receiving a large, but not necessarily lethal, dose.* The onset of symptoms was delayed until the end of the second week after exposure. These consisted of loss of appetite and malaise, diarrhœa and some wasting, and loss of the hair. Recovery largely depended on good nursing.

(3) *Those receiving a low dose.* Symptoms of the above type were present to a slight degree after the second week or were entirely absent.

An examination of the blood of casualties by counting the different types of blood cells gives a fair indication of the severity of the illness and a check on its progress. It is the best means of assessing whether a blood transfusion is necessary

or not and, if necessary, the amount of blood required. The assessment of the degree of radiation injury and the giving of transfusions are among the major medical problems.

Blood, and plasma which is one of the constituents of blood, are commodities even now in short supply and will be in great demand in warfare for the treatment of all the different types of injury, whether caused by the atom bomb or other weapons of destruction. Under ideal conditions, blood cannot be stored for longer than 21 to 28 days, mainly due to degenerative changes in the red blood cells, but the plasma, i.e., the clear portion of human blood from which the red and white cells have been removed, when dried, will keep for several years. Plasma is particularly valuable in the treatment of burns, but blood is required for all types of injury where there has been severe blood loss and also for the treatment of cases of injury due to radiation. It seems most improbable that sufficient blood and plasma will be available in any country to deal with more than a limited number of atom bomb " incidents."

Research work is being carried out in many countries to discover an ideal substitute for blood and plasma. During the 1914–18 and 1939–45 Wars a number of substitutes for blood were used both by the Allies and by the enemy ; but all had serious disadvantages. The Swedish product dextran has been used with success in England and the United States, but is still far from the ideal.

The 1939–45 War demonstrated the size of the organization necessary for the maintenance of an adequate blood transfusion service to meet the needs of the civilian population and overseas forces. This effort will have to be increased considerably in any future war and, even prior to the outbreak of hostilities, arrangements must be made to have stocks of dried plasma and blood substitutes available. Training will be essential to ensure that the necessary technicians are available to carry out transfusions, blood counts, and blood grouping.

An important task of the medical and health services will be the prevention of further casualties among rescue workers and others as a result of undue exposure to residual radiation or the ingestion of contaminated food and water supplies. The quantity of radiation an individual can stand either externally, or internally from ingestion or inhalation without harmful effects (either immediate or after the passage of time) is known as the " tolerance dose." This amount is based on an absence of clinical effects to a single exposure or to multiple smaller doses spread over a period of time. Exposures to doses in excess of the tolerance dose are likely to be followed by casualties and consequently constitute a hazard. It is not unlikely that circumstances may arise when it will be necessary to send rescue squads, bodies of troops, or others into a radio-active area, and the amount of residual radiation present may be so high that working in these areas would result in casualties. The decision as to whether parties should be sent into such areas will be the responsibility of the controller or commander on the spot, who will have available tables to indicate the number of casualties which are likely to follow exposure to different doses of radiation. From these and the information available as to the quantity of residual radiation being emitted, he will be able to assess the advisability of exposing individuals to the risk.

Hazards from exposure to radiation are not a new experience. Several years ago the maximum dosage of radiation to which an X-ray worker could be exposed was laid down, and rules were drawn up (*a*) for the conduct of X-ray rooms to minimize the chance of over-exposure and (*b*) for the regular examination of personnel to detect early physical changes which might result from such over-exposure. Radio-

active material may be absorbed into the body by inhalation or ingestion and through injured skin surfaces. The effects of radioactivity within the body have been long recognized as an industrial hazard. From 1920 onwards cases of radiation injury occurred in luminous dial painters who moistened with their saliva the tips of brushes which had been dipped in radioactive paint, and also in uranium miners in the Joachimstahl mines in Czecho-Slovakia. Radiation injury may thus arise : (*a*) from an external source of penetrating radiation, and (*b*) from absorption into the body through ingestion or inhalation.

The intensity of radiation given by the fission products resulting from an atom bomb explosion dies down very rapidly. The hazards due to residual radiation will vary with the different types of burst. After a high air burst the rising " ball of fire " carries the products of the explosion upward, and the powerful rising air currents produced by the blast and heat disperse this material so effectively into the surrounding atmosphere that only in exceptional circumstances will the radioactive particles falling to earth constitute a hazard. In the case of a low level ground or under water burst, however, residual radiation may constitute a very serious problem due to the " fall out " of radioactive material. In assessing the radiation hazards of an area it is essential to differentiate between remaining in the contaminated area for prolonged periods, and entering it for rescue operations ; in the former case the dosage received by an individual remaining in the area for 24 hours may result in serious injury or death, but in the latter that received by walking through the area or remaining there for a short period of, say, 15 to 30 minutes, is unlikely to have any harmful effects.

The type of burst also requires consideration when assessing the risk of contamination of food and water supplies. After a high air burst serious contamination of water supplies in reservoirs or other parts of the water purification system would be unlikely. As mentioned previously, radioactivity resulting from the " fall out " of fission products to the ground would be small, but an explosion at ground level or an under water burst might produce very heavy contamination in open reservoirs, and might be so serious as temporarily to preclude the use of water for cooking and other domestic purposes. The length of time that the water would remain unusable will naturally depend on the degree of contamination. It will be an important duty of medical officers of health to evaluate the analysis of water supplies. It should be noted that chlorination and boiling will not destroy radioactivity. This may be removed, however, by the usual processes of sedimentation and filtration. The disposal of radioactive waste from the filtration plant will be difficult, and it may be necessary to bury this waste to avoid contamination of sewers. It should be noted, however, that the normal decay of radioactive particles will rapidly reduce contamination to safe levels in the course of time.

Food is likely to be contaminated after an atom bomb burst, but it can be assumed that tinned or canned food, if the tins are undamaged, and food in sealed packages or in refrigerators can be used provided care is taken to wash off any dust or moisture from the outside of the container. It will be one of the duties of medical officers to help to determine whether perishable or non-perishable foods from stores, markets, and restaurants within the zone of residual contamination are fit for human consumption. The cooking and boiling of food will not destroy radioactivity.

A general survey has been given of the main problems which will face the medical services in atomic warfare, but the magnitude of their task will be better realized when estimations are made of the total number of casualties which are likely to occur after the explosion of an atom bomb of similar power to that used on Japan.

A recent assessment of casualties for a British city made by Leader-Williams and Smith[2] is given in the following table (republished with the kind permission of the Editor of the *Practitioner*) :—

TOTAL CASUALTIES FROM ONE NAGASAKI TYPE ATOMIC BOMB AMONG A POPULATION OF DENSITY 43 PER ACRE

Types of casualty	*Exposure*	
	Everyone in a house	*Everyone in a reinforced brick surface shelter*
Killed outright or trapped in debris	30,000	10,400
Delayed radiation deaths	1,100	3,900
Total killed	31,100	14,300
Injured, not affected by radiation	27,000	1,800
Injured, by radiation	2,500	8,700
Total injured	29,500	10,500

For comparison, separate estimates were made on the hypothetical assumption that the entire population is placed in turn in (*a*) houses, and (*b*) the last-war type of reinforced brick surface shelters. The effect of shelter is to reduce the number of both killed and injured to less than half of that which would have occurred if all had been inside houses, and to about a quarter of the estimate for an exposed population caught unawares in the open.

The location of the population at the time of the explosion will determine the ratio of the different types of injuries. If the Japanese experience is used as a basis for determining the percentage of the different types of casualties for exposed populations, it may be assumed that, of the survivors, 60 per cent. will be suffering from burns, 50 per cent. from traumatic injuries and 20 per cent. from radiation injuries (a number of the casualties will be suffering from more than one type of injury). Theoretically, if the whole population is in houses or shelters, there should be no casualties due to flash burns, and 80 per cent. of the injuries will be of the traumatic type due to the secondary effects of blast. The remaining 20 per cent. will be due to radiation and burns due to secondary fires.

It is obviously impossible to predetermine the circumstances which may exist at the time of an atomic bomb attack. Preparations are likely to prove inadequate if these are based only on the supposition that every one will be in reinforced brick shelters. Most likely there will be a combination of different circumstances. It does, however, appear that an estimate of casualties based on the assumption that the whole population will be in houses can provide a satisfactory basis for assessing the medical problem. The data available on the types of casualties produced during the bombing of cities in the last war is a valuable guide for calculating the possible proportion of the seriously injured who will require urgent surgical treatment.

Although this paper has primarily assessed the medical problems from a Civil Defence point of view, the general principles are equally applicable to an army in the field where the question of sheltering will be of great importance.

[2] E. Leader-Williams and J. Smith (1950), *Practitioner*, 165, 990, pp. 594–602.

Biological Warfare

Biological warfare is a weapon as yet untried in war, and one for which the most extravagant and unrealistic claims have been made. This type of warfare may be defined as the dissemination of living germs or their poisonous products (toxins) to cause death or disease in humans, animals, or plants. Assuming that man will be able to use biological warfare as a weapon—and there is by no means any certainty of this—it is theoretically possible that sickness can be spread deliberately among selected groups of a community and lead to disruption of industry, chaos in the everyday life of a nation, and disorganization of a force. If attacks were directed against animals and crops, they could lead to serious interference with the availability of food supplies.

A number of statements have appeared in the Press in recent years about the horrors of biological warfare and the terrible nature of this weapon. But when the pros and cons are examined impartially, would the use of this weapon really be so inhuman? It is a weapon which is only effective against living things, and which does not cause structural damage. Therefore its use is not attended by the destruction and devastation caused by V weapons and conventional incendiary and high explosive bombing, from the effects of which this Country is still suffering. Dr. Wansbrough-Jones asks one to consider the question: is a direct attack on man with a biological warfare agent, which still leaves him with the resources of modern medicine as a counter-measure, any less humane than an attack by explosive, fire, or bullets, let alone the atomic bomb?

The concept of biological warfare is not new. Man in his age-long struggle has been continuously on the defensive against biological warfare waged by nature. He has had to develop a defence against insidious attacks which in the past have led to epidemics like the Black Death in the XIVth Century, when about a third of the population of Europe perished; the Plague in the XVIIth Century, which disrupted the life of London; and, in more recent times, the influenza epidemic in 1918, which caused more deaths in a matter of months than did bullets and shells in the four years of war. In past centuries the louse, by spreading typhus; the rat and flea, plague, and the mosquito, malaria and yellow fever, had a greater bearing on the course of campaigns than generalship. Up to the 1914–18 War deaths from disease in war far outnumbered those from firearms.

To wage biological warfare successfully man must adopt the mantle of nature. But it is evident from the present day spread of diseases, such as infantile paralysis, influenza, measles, foot and mouth disease, and fowl pest, which cannot be prevented, that scientists have much to learn before they can emulate nature. Bacteriological research must be intensified to ensure that defensive measures are so satisfactory that it would be impossible for biological warfare to be waged successfully. Such research must also be directed to a study of the mechanism of the spread of epidemics.

Defensive measures against biological warfare agents must be based on the fundamental principles of public health for preventing the spread of disease. It therefore follows that any country which has a well-organized public health service has also available the nucleus of a defence organization which can be adapted to meet unnatural outbreaks of disease; but planning must be integrated with any general defensive plan.

The first requisite in any scheme for defence is the provision of adequate facilities for the detection and identification of biological agents. The identification of germs

is at present a highly skilled and laborious procedure. Specially fitted laboratories, staffed with trained bacteriologists and technicians, are necessary. It is obviously desirable that efforts should be made to speed up techniques so that possible biological warfare agents can be identified rapidly.

Humans and animals can only be infected by three routes, viz. : *inhalation* from the air, e.g. common cold ; *ingestion* of infected food or water, e.g. typhoid and dysentery ; and through *the skin surfaces and mucous membranes*, e.g. tetanus by development of infection in a wound, or malaria from the bite of a mosquito.

The first line of defence is, as always, the prevention of the infecting agent from reaching the victim. The respirator will afford physical protection not only against the inhalation of chemical, but biological warfare agents as well. Clothing impregnated with certain repellant chemicals did much to minimize the number of casualties from scrub typhus in Burma and Malaya ; this is another type of physical protection. Food and water supplies are always liable to be infected either accidently or deliberately. These vehicles of infection are those obviously likely to be used by a saboteur. Water discipline as practised in the Army and the consumption of well-cooked, hot food should do much to minimize the risks from these sources.

But there is always a possibility that these barriers to infection may break down, and allow the infecting agent to find its way into the body of the victim. This necessitates *a second line of defence*, namely, preventing the development of disease once infection has taken place. This is done by increasing resistance and is generally referred to as immunization. This can only be carried out when sufficient time is available and the probable infecting agents known. It is a long term policy, and the immunization of a large population (known as mass immunization) against a number of diseases is, as is well known, practised in the Services. Basically, every Service man is protected against smallpox, enteric fevers, diphtheria, and tetanus. When at special risk he is also inoculated against cholera, plague, and typhus. A potential enemy naturally will not use an agent against which a community is likely to be protected. It is improbable, however, that the state of immunization in the civilian population can be as satisfactory as that in the Services.

It is therefore necessary to have a short term policy, available for use after an agent has been identified, when infection is likely to occur among non-immunized persons. This is the practice adopted for the protection of contacts of infectious disease, e.g. antiserum is used to prevent the development of diphtheria, and sulphonamides are used for meningitis.

Finally, if these prophylactic measures fail and disease does develop, it is essential that the resources of modern medicine are available to reduce the time of disability to a minimum.

To summarize : medical problems in biological warfare will be :—the rapid detection and identification of agents used ; the protection of individuals by immunization, when time permits and possible agents are known ; the prevention of the development of disease once infection has occurred ; and, finally, the treatment and cure of the stricken.

Chemical Warfare

Since the 1914–18 War developments in the field of chemistry have been overshadowed by those in physics, particularly nuclear physics. This has led to the development of an outlook in which the potentialities of chemical warfare have

tended to be ignored or forgotten. Although chemical warfare was not used during the 1939–45 War, it must not be assumed that this type of warfare will not be used in the future. After their defeat it was discovered that the Germans had available large stocks of the older-known types and of some new types of chemical warfare agents.

It is not known definitely why Hitler did not use chemical warfare against this Country. A probable explanation is that the enemy was aware that, owing to the state of preparedness of the nation for defence against this type of warfare by the agents then available, any attack was likely to be unsuccessful or only partially successful. Further, he probably hoped to win the war without the use of chemical warfare and the odium which would follow. Later, however, when the new agents were available, he had lost air supremacy, and the opportunity for the use of chemical warfare had passed. It is therefore obvious that the potentialities for a successful attack with chemical agents must depend directly on the state of preparedness of the nation or Services. These preparations must ensure that the medical profession has adequate knowledge and training for the prevention or early treatment of casualties.

The study of chemical agents, whether used for the destruction of man or to cure his ills, or whether to destroy plants or insects or to fertilize the ground, follows certain basic principles. Physical properties, such as stability, solubility in water or other fluids, and the effect of temperature, must be ascertained. The physiological and pharmacological action on man and animals must be determined, so that the requisite knowledge is available as to how the substance works. The effects of different doses, including those which have harmful or toxic effects and, if these latter, the antidotes to be used to combat them, must be investigated.

Chemical agents do not only constitute a menace in war, in peacetime they may form serious industrial risks. Examples of these are—carbon monoxide poisoning from exhaust fumes, sulphur dioxide from refrigerators, carbon tetrachloride from spray paint, chlorine in submarines, and poisoning from insecticides, such as D.D.T. and parathion.

Most of us have heard of the important chemical agents used in the 1914–18 War—chlorine, phosgene, mustard, and lewisite. A great deal of research into the action of these agents on man and animals, and the best means of treatment of casualties caused by them, was carried out during the inter-war years.

It is interesting to note that during the investigation into some derivatives of mustard gas, it was found that nitrogen mustards appeared to have a therapeutic action on certain types of blood disease, and further research is now being carried out into this beneficial use. Veritably a case of good coming out of evil!

It must not be assumed that merely because a good deal is known about the potentialities of the chemical agents used in the 1914–18 War and the appropriate counter-measures to minimize their effects, that at least some of them would not be used in a future war. But the main interest of the medical profession is centred round the newer types of war gases which were discovered in Germany at the end of the last war. These are commonly referred to as the nerve gases, because they interfere with the transmission of impulses along the nerves by causing a block at the junction of the nerve ending with the muscle fibre. This may be compared to a break in an electric wire which prevents the flow of current.

The effect of poisoning by nerve gases[3] leads to paralysis of the muscles carrying out respiration and a constriction or narrowing of the air passages in the lungs similar

[3] J. R. Wood, *et al* (1951), *U.S. Armed Forces Medical Journal*, II, 11, pp. 1,609–1,617

to that encountered in cases of asthma. Other symptoms are due to contraction of the pupil of the eye which interferes with vision. Casualties can be caused either by external liquid contamination or by the inhalation of vapour, and are liable to occur with extreme rapidity. In contrast to the non-irritant war gases, there is no lag period between the contamination or inhalation of vapour and the manifestation of symptoms.

In severe cases it is the interference with respiration that constitutes the gravest menace to life and requires the most urgent treatment. Physiologists and pharmacologists have been investigating these problems. It has been found that the early administration of atropine is the best line of treatment, but it is emphasized that this must be given early. Since atropine is the principal therapeutic agent, the correct dosage should be available in a readily usable form, such as in a syringe for self-injection. Artificial respiration may be required to restore natural breathing after severe poisoning.

One important task of the medical services in the field will be to decide when a man who is a nerve gas casualty can return to duty. At present this decision can be based only on laboratory findings. The technique for these determinations is complicated and requires special apparatus.

Such is the nature of the problems confronting the medical profession in the prevention and treatment of casualties due to chemical agents. Ever since chemical warfare has been used the respirator has been the first line of defence and must remain so. It is, therefore, of the greatest importance that respirators fit properly and that both civilians and service personnel are familiar with respirator drill.

Commentary

Details have been given of the many and varied problems which the medical services will have to face should atomic, biological, or chemical warfare be used. Some of the problems will have been encountered previously either in dealing with casualties caused by conventional weapons used in the past, or during the routine treatment of disease ; others will be new. It will be the number and variety of the problems which will strain the medical resources of a nation.

The scope of the responsibilities which the medical services will be called upon to undertake in the preservation of morale, the conservation of health and the treatment of sick and wounded both in Civil Defence and the Services, makes it imperative that this should be fully realized in all stages of planning to ensure that medical manpower is not dissipated.

What of the future ? Will the biological sciences make advances during the next decade similar to those made in the field of nuclear physics during the past decade ? If so, will the knowledge be used for the benefit or the destruction of the human race ? The future and even the ultimate survival of man may depend on the answer to this question.

TRENCH GASCOIGNE PRIZE ESSAY, 1951

By Colonel P. A. Tobin

SUBJECT

" The requirements of the cold war and preparations for a hot war are to a considerable degree contradictory. The normal phase of " Parliamentary parsimony " which follows on a war is compelling us progressively to concentrate on the former in shaping our Forces at the expense of the latter. It is often said that in the next war we shall not have a breathing space in which to build up our Forces in the traditional manner, but will require considerable Forces immediately available for action.

How can the Commonwealth resources best be designed to meet the demands of the cold war, and to fulfil the mobilization requirements? "

The views expressed by the author in this essay are entirely his own and do not necessarily reflect official opinion.—EDITOR

INTRODUCTION

IN one respect there has been a considerable change in world conditions since the subject for this essay was selected. Pressure of world events, starting with the outbreak of war in Korea, has led to a marked increase in the tempo at which the armed forces of the British Commonwealth, together with those of the United States of America and other members of the North Atlantic Treaty Organization, are being developed. To-day this Country, together with her Allies within and outside the Commonwealth, is embarked upon a programme of rearmament greater in scope and cost than anything we have previously had to undertake in peace. The traditional post-war period of " Parliamentary parsimony " has in this case been short lived.

The problem formulated in the setting of this essay nevertheless remains a very real one. This is particularly true of that aspect of it which concerns the imperative necessity of our peace-time forces being so organized that they will be immediately available for effective employment on the outbreak of a hot war, which may well have started without any previous declaration by the aggressors as to their intentions.

Relationship of the British Commonwealth to the other Western Powers

This paper concerns itself with the organization and employment of the forces of the British Commonwealth to meet the conflicting requirements of hot and cold wars. It is, however, essential to emphasize from the outset that at no time will the Commonwealth, let alone the United Kingdom, be acting alone. Nor indeed can the British Commonwealth now be regarded as a unity which will automatically follow the leadership of the United Kingdom.

The interests of the various Dominions are much at variance. Canada alone is linked with the United Kingdom in the North Atlantic Treaty Organization. Australia, New Zealand, and South Africa are all seriously concerned, albeit indirectly, with the security of the Middle East, whereas Canada has no direct interest in that quarter. Canada's links with the United States of America are very strong; it is thus logical to expect Canadian policy to be a compromise between those of the United

States of America and the United Kingdom. Unfortunately, India and Pakistan are so obsessed with their own problems that nobody can foresee clearly what part they will play in the great struggle between East and West.

Thus, in writing this paper, we cannot necessarily assume a common policy for all the nations of the Commonwealth. Primarily we shall be concerned with the employment and organization of the forces of the United Kingdom although, where the other Dominions have an important part to play, this will be stressed.

Similarly, in this paper, the role to be played by the other Western Powers in the struggle against Communism will inevitably tend to fade into the background, but it must always be assumed that each one of them, within its capacity and according to its lights, is following a policy very similar to that proposed for the United Kingdom and her associates in the Commonwealth. For convenience, the term Allies is used throughout this paper to denote all those nations which are linked in their opposition to Communism, and in particular includes the British Commonwealth, the United States of America, and members of the North Atlantic Treaty Organization.

Outline Of The Paper

Before we can assess and compare the nature of the forces required for either hot or cold war conditions, it will first be necessary to establish clearly the difference between these two conditions and the purposes for which armed forces are required in each of them. We will therefore start by examining in turn both a hot war and the cold war with a view to defining the strategy to be followed by the Western Allies in each of them, and of determining in broad outline the different type of forces required for each of them. We will then take each Service in turn and compare the ideal composition of that Service in cold and hot war conditions, finding what conflict of interest arises and endeavouring to discover a solution that will meet the requirements of both conditions efficiently and economically. Thereafter we will draw up firm recommendations for the composition of our peace-time forces, showing how these can be expanded to meet the needs of a hot war if and when that arises. Finally, we will draw any general conclusions that may have emerged as a result of this examination.

Since perhaps the pattern of a hot war is more familiar to us, and since rearmament to meet the eventuality of a hot war is in fact already under way on a large scale, it seems appropriate that our examination should start with a hot war and the forces needed to meet it.

A HOT WAR

Definition

We can define a hot war as being an open conflict between the Western Allies and Russia, supported by her satellites and China, in which the total resources of each side are devoted to unrestricted warfare with the object of overthrowing the enemy, regardless of the cost.

To forecast the pattern of a future war is notoriously a foolish undertaking, but it is perhaps possible, without undue risk, to make certain basic assumptions as to the probable Allied strategy in such an event.

Allied Strategy

Firstly, the Allies are unlikely to be the aggressors.

Secondly, the defence of Western Europe and the United Kingdom will be the initial Allied aim on land, since it is only with this assurance that the peoples of

Western Europe can be expected to join whole-heartedly in resisting Russian aggression.

Thirdly, the defence of the Middle East will rank second in importance only to that of Western Europe.

From this it is apparent that, in spite of the obvious disadvantages, we and the United States of America are committed to a continental strategy in Europe. Basically this is a land strategy, superimposed on which will be the struggle at sea and in the air. The pattern of such a strategy is likely to take the form of an initial defensive period during which the Allies will attempt to hold the Russian land forces as far East as possible and to hold the Middle East. At a later stage, when Allied strength has been developed and Russian power correspondingly whittled down, the Allies will pass to the strategic offensive on land.

Russia being virtually self-contained economically and independent of sea communications, the war at sea will be essentially defensive with the aim of maintaining the vital Allied sea communications against the inevitable enemy offensive by submarines, mining, air attack, and surface raiders. Air power will play a decisive role in this battle at sea.

The war in the air proper, as distinct from the employment of air forces in support of our sea and land forces, falls into two distinct compartments—defensive and offensive. The first comprises the defence of Allied bases, and particularly the United Kingdom, against enemy air attack. The second involves the strategic bombing of targets in Russia and Eastern Europe and forms the only means whereby the Allies can take the offensive in the early days of a hot war.

Organization of Hot War Forces

From these basic assumptions it becomes possible to assess in general terms the pattern of the forces needed to implement such a strategy.

On land, there will be a requirement for a full-scale continental army capable initially of holding firmly the strategic defensive and subsequently of passing to the strategic offensive. To offset the inevitable enemy superiority in numbers, such a force will require to be highly mechanized with a very heavy scale of fire-power. In order to be able to operate offensively, not merely in the later stages, but also tactically from the outset, a high proportion of armour will be required.

Only by making the maximum use of their technical superiority can the Allies hope to offset the numerical preponderance of the enemy. Engineer, signals, and administrative units will be needed in full proportion to the fighting arms. A powerful tactical air force will be essential to provide our main armies with both direct and transport support.

At sea, the prime requirement will be for very large numbers of escort vessels for the anti-submarine and anti-aircraft protection of our merchant shipping. The mining threat will require a great fleet of minesweepers. A number of cruisers to counter commerce raiders will need to be maintained at key points around the world. In view of the enemy's comparative lack of heavy surface forces, large fleets of capital ships and fleet carriers as existed in the last war will not be necessary, but, to ensure that we possess the most powerful striking force afloat, a comparatively small squadron of fast battleships and fleet carriers with their attendant cruisers and fleet destroyers must be provided. The bulk of the air support for the war at sea will be provided by shore-based maritime air forces, but there will be a requirement for a

considerable number of escort carriers from which anti-submarine and fighter aircraft can operate in defence of our merchant convoys. To enable our land forces to take the offensive against the enemy's flanks, a large fleet of landing craft will require to be built up as rapidly as possible.

We have already mentioned that tactical air forces will be required for the support of the land forces and maritime air forces for the war at sea. For the air war proper we require defensive and offensive forces. The former will comprise large numbers of day and night interceptor fighters. Initially these aircraft will be piloted, although in the not far distant future they will inevitably be replaced by the pilotless aircraft or guided missile. Defensive air forces of this type will require to be established at key points throughout the world.

For the offensive role, a force of strategic bombers will be necessary. The aircraft must have the capacity to carry the atom bomb, or a heavy load of conventional high explosive or incendiary bombs, to every worthwhile target, operating from Allied bases. It is possible, but by no means certain, that to enable such bombers to fight their way to and from their targets a considerable force of long-range escort fighters will be required. Long-range, high altitude reconnaissance aircraft will be an essential adjunct to any such force.

Summary

To sum up. The forces required for a hot war can be broadly described as follows :—

(*a*) A full-scale continental army supported by powerful tactical and transport air forces.

(*b*) Naval forces designed primarily for the protection of our merchant shipping, with a small covering force of heavy ships and supported by considerable maritime air forces.

(*c*) Defensive fighter forces stationed at key points and supported by anti-aircraft units.

(*d*) A strategic bomber force with its supporting escort fighter and reconnaissance units.

THE COLD WAR

Definition

We may define the cold war as a period during which the Russo-Communist offensive against the non-Communist world falls short of full-scale war but continues nevertheless in two main guises. The first is the employment of subversive measures against the political and economic stability of the non-Communist countries, principally through the medium of the various national Communist parties. The second is nothing less than open war, but carried out by the satellites or by Communist minorities, often under the pretence of nationalism. It might fairly be said that the cold war will become hot the day that Russian forces clash in open battle with the forces of any of the Western Allies.

Allied Strategy

The aim of Allied strategy in the cold war period is the containment of any further Russian expansion, whether unconcealed or under the guise of Communism. The Allies have now made it plain that, in view of the threat to their continued existence as free democratic nations, the preservation of peace at any price is no longer their prime aim.

The achievement of this Allied aim requires the following conditions. Firstly, the maintenance of stable political and economic conditions in all areas directly or indirectly threatened by Communism. Secondly, the improvement of standards of living in those areas where poverty, disease, and ignorance render the people ripe for Communist infiltration. Thirdly, the possession by the Allies of armed forces on a scale adequate to deter any armed aggression or, failing that, to meet and defeat any such aggression at the earliest moment.

Organization of the Cold War Forces

The forces required to implement this strategy fall into two categories; those required to deter any potential enemy aggression, and those needed to ensure the political stability and internal security of the threatened areas.

The forces for the first of these tasks are essentially those required for a hot war, and only forces that will be fully effective in a hot war will meet this requirement. They must, moreover, be at immediate readiness for action. This leads us at once to conclude that we must possess in peace a proportion at least of forces of the type which we have already decided will be necessary for a hot war. What proportion of those forces we can expect to provide in peace we will consider in some detail later.

The provision of forces for the second task, that of internal security, is a normal peace-time commitment for all nations, and particularly for those with responsibility for colonial possessions. To-day, with unrelenting Communist pressure at all potential soft points, the need for such forces is greatly aggravated. Furthermore, since this pressure will often, as in Indo-China, take the form of open conflict on a scale not far short of war, not only must these forces be considerably larger than formerly, but they must also be equipped with more powerful weapons, such as artillery, tanks, and aircraft.

The detailed composition of internal security forces will vary greatly with local conditions, but normally the load falls in the main upon the land forces with some air support. Similarly, within the land forces, the organization will vary, but normally the main burden will devolve upon the Infantry, although, as has already been stated, there may be a need for artillery, armour, and engineers. Nevertheless, it can reasonably be assumed that the principal requirement will be for a high proportion of infantry, with the other supporting arms and administrative services forming a considerably smaller proportion of the whole than would be the case in formations designed for a full-scale hot war.

With its speed and flexibility air power will play an essential part in this role of internal security, although its efficacy must vary greatly with the terrain. In Malaya, for example, the offensive employment of air forces is severely restricted by the nature of the country, whereas in more open country, such as is found in the Middle East, the air forces may well become the predominant partner in preserving the peace. The use of air power for transport support of the land forces will, however, be of the utmost value irrespective of geographical conditions. The main uses of air transport in the cold war will be for the rapid reinforcement of threatened areas, the dropping of airborne troops, the supply of ground forces from the air, and the evacuation of casualties. In all these capacities the helicopter must play a decisive part in the future. Air reconnaissance, both visual and photographic, will always be an essential requirement for both land and air forces.

The role of the Navy in the cold war is perhaps less positive than that of the other two Services, but its importance is none the less for that. The moral effect of the presence of warships in disturbed areas alone is of the utmost value. Warships

provide an invaluable reserve of fire-power and—to a small extent—of fighting manpower. They provide invaluable emergency means of moving army or R.A.F. units at short notice; in this respect aircraft carriers are particularly valuable. Naval ships can often provide the land forces with both fire and air support where these would not be available from any other source. Where assault landings from the sea form part of the land operations, the Navy will be needed to man the landing craft.

However, valuable as all these forms of assistance may be, the principal role of the Navy in the cold war will be, as ever, to ensure the safe and timely arrival of the men, stores, and equipment required by the other Services and by the civil population. This may well involve, as in the Suez Canal Zone, the control, berthing, piloting, and unloading of merchant ships.

Mention should be made of the Royal Marines who, with their high degree of training in assault landings and their sea-going experience, are admirably suited for the rapid reinforcement of threatened areas overseas.

Before leaving the requirements of internal security it is essential to stress that the local forces in themselves are not enough. It will not be possible to foresee where the pressure will next be applied. Powerful strategic reserves must exist in peace which can be moved rapidly to threatened areas anywhere in the world. These reserves should be provided by complete army formations and R.A.F. units which can be moved by sea or air and launched directly into the battle wherever it may be. The organization must be such that they can be absorbed by the command, signals, and administrative organization of the theatre in which they are required to operate, without the need for large increments to the local staffs and services. This applies equally to land and air forces. It is of particular importance that R.A.F. units in this role shall be strategically mobile by air, so that the unit ground personnel and equipment will arrive at their destination simultaneously with the operational aircraft.

Summary

To sum up. The forces required for the cold war period should ideally consist of the following:—

(*a*) Internal security land forces located throughout the world in strength proportionate to the threat, with associated air forces for both direct and transport support of the ground units.

(*b*) Complete army formations in strategic reserve at key points, preferably with the associated transport air forces for their rapid movement.

(*c*) Reserve air force units similarly located and suitable for direct and transport support of ground forces.

(*d*) Naval forces required include (i) aircraft carriers, for troop movements and air support; (ii) cruisers, for fire support, troop movement, and "showing the flag"; (iii) landing craft, for operations with the landing forces; (iv) destroyers, frigates, etc., for duties similar to those performed by cruisers.

Before leaving the requirements of the cold war, it is important to stress the importance of the existence in peace of headquarters and signals and administrative organizations capable of commanding and administering naval, land, or air forces despatched to a theatre. Adequate reserves of food, fuel, ammunition, and stores, as well as the heavier and more bulky items of equipment such as tanks, medium artillery, and engineer equipment, should also be held in these theatres wherever possible.

COMPARISON BETWEEN HOT WAR AND COLD WAR REQUIREMENTS

Having drawn certain conclusions as to the general nature of the armed forces required for both hot and cold wars, it is now necessary to compare the two requirements for each Service in turn and to see where there is a conflict of interests. However, before embarking upon a detailed study, it is essential to emphasize that no reduction in the efficiency of our hot war forces will be acceptable merely to make them better suited for a particular task in the cold war. Where there is a conflict between the ideal requirement of the cold war and that of a hot war, it will be the former ideal that must be compromised and not the latter. Here it is worth repeating that by far the most effective Allied weapon in the cold war will be the possession in peace of adequate forces of the type and strength needed for a hot war.

Naval Forces—A Comparison

Our naval requirements for a hot war can be summarized briefly as follows :—

(*a*) The maximum strength in escort vessels of all types, particularly anti-submarine and anti-aircraft escorts, escort carriers, and minesweepers.

(*b*) A moderate force of cruisers for commerce protection.

(*c*) A small striking force of battleships and fleet carriers with their attendant cruiser and destroyer components.

(*d*) A considerable fleet of landing craft.

(*e*) A powerful force of submarines for both offensive and defensive use.

(*f*) A powerful, shore-based maritime air force.

In comparing these requirements with what was considered desirable for the cold war, the first point that emerges is that there are a number of categories in a hot war fleet for which there is no specific requirement in the cold war. Chief among these are :—

(*a*) The covering force of capital ships.

(*b*) The large force of anti-submarine and anti-aircraft escorts and minesweepers.

(*c*) The submarine force.

(*d*) The full-scale maritime air force.

On the other hand, while there is no category required for the cold war for which there is not a corresponding need in a hot, there is perhaps a greater demand for cruisers and large destroyers than are genuinely required in a new-style, defensive, hot war fleet.

Our naval forces must be fully operative from the first day of a hot war and, since vessels in the categories mentioned above cannot be produced at short notice, they must not only exist in peace, but a high proportion must be manned and the crews fully trained. The cold war fleet must therefore include certain elements for which there is no specific requirement in the cold war, but which must be operationally ready on the outbreak of a hot war. However, if the possible employment of these elements in a cold war is examined, it will be found that they can in fact be of the greatest value ; firstly, because the most valuable asset in the cold war is the possession of sufficient strength to deter the enemy from aggression ; secondly, because we can employ these categories on tasks somewhat different from those for which they were primarily intended. For example, the capital ships and carriers of the striking force

will be more effective than any other type for rapid reinforcement and morale value, while the attendant cruisers and fleet destroyers may serve to fill the lack of these types likely to exist in peace.

To find employment in the cold war for the escort vessels and minesweepers will be less easy, but there is no reason to doubt that they can play a useful part. In any case, such is the importance of the training of their crews, that too much time can never be devoted to it, even in peace. This applies even more forcibly to the submarine forces.

During the cold war there is comparatively little active requirement for our maritime air forces, with the result that both Coastal Command and its equivalent air forces overseas have tended to be dangerously neglected in peace. To maintain these forces at full strength in peace would clearly be impossible, but, such is the importance of the air arm in the vital task of maintaining our sea communications, it is imperative that there should exist in peace a healthy nucleus of these maritime and air forces, training actively with the Navy and developing the most efficient weapons and technique.

Composition of the Naval Forces

It is now possible to form a reasonably clear picture of the composition of the Commonwealth naval forces in peace, these being designed to meet both the demands of the cold war and mobilization requirements. These forces can be divided into two main components, the active fleet and the reserve fleet.

In the active fleet will be those units which are required for the active prosecution of the cold war and for the essential training of those additional forces required immediately on the outbreak of a hot war. They will therefore include :—

(*a*) The main striking force of battleships and fleet carriers with attendant cruisers and fleet destroyers.

(*b*) The maximum number of cruisers that are available and can be manned.

(*c*) A considerable number of light fleet or escort carriers.

(*d*) As substantial a nucleus of the anti-submarine and anti-aircraft escorts as can be manned.

(*e*) Flotillas of landing craft distributed to meet our world-wide internal security needs.

(*f*) A high proportion of the hot war submarine force.

In the reserve fleet will be retained, in a high degree of readiness, those vessels which will be required immediately on the outbreak of a hot war to bring our naval forces up to the required strength. These units will be manned principally by reservists called up on mobilization. In this fleet will be :—

(*a*) Small reserves of the larger ships and fleet destroyers so as to ensure that the main fleet will always be up to full strength, and to allow for the modernization of ships in rotation.

(*b*) Any light fleet or escort carriers surplus to the needs of the cold war.

(*c*) A large number of escort vessels and minesweepers.

(*d*) Reserves of landing craft.

(*e*) Any reserve of submarines.

(*f*) Fleet transports, oilers, hospital ships, and other auxiliary ships and craft.

The distribution of our naval forces among the nations of the Commonwealth will vary with the needs of each Dominion and its shipbuilding capacity. It can safely be assumed, however, that the main fleet and larger ships will, in the main, be both built and manned in the United Kingdom. The resources of the Dominions should be devoted almost entirely to the production and manning of the maximum number of escort vessels, minesweepers, and—possibly—landing craft, which vessels are not only those in greatest demand in a hot war, but are also most easily within the building and manning capacity of the Dominions.

It will be apparent that the classes of vessel which will be required in large numbers in the period of expansion following the outbreak of a hot war are the escort vessels, minesweepers, and landing craft rather than the large types. These categories, fortunately, are those which can be built comparatively quickly and in a large number of small, widely dispersed shipyards ; a most important factor in the face of possible atomic attack.

Before leaving the naval aspect, the place of the maritime air force must again be emphasized. It has already been stated that a nucleus at least must exist in peace, but it will require to expand very rapidly on the outbreak of a hot war, and its organization and mobilization plans must permit of this.

Land Forces—A Comparison

Our land forces requirements for a hot war amount quite simply to the largest full-scale, continental army that our man-power and industry can maintain after the essential demands of the Navy, R.A.F., industry, and administration have been met.

In comparing this requirement with the needs of the cold war, it is at once evident that an army designed entirely to meet the ultimate demands of a full-scale hot war would be far too expensive, too cumbersome, and too immobile for the needs of the cold war.

We have already decided that our requirements for the latter are two-fold :— firstly, comparatively lightly equipped internal security forces, distributed at key points throughout the world ; and secondly, complete and strategically mobile formations which can be moved rapidly to any threatened area, preferably by air.

In comparing these requirements with those for a hot war, the first point that emerges is that these reserve formations are in every way suitable for immediate participation in a hot war, particularly since they will meet that essential requirement of being fully prepared from the first hour of such a war.

On the other hand, the internal security forces described previously would not be suitable for immediate employment in a full-scale continental war without considerable strengthening in the field of armour, artillery, engineers, and administrative services. However, it is most improbable that in practice we would be able to divert any part of our internal security forces to the main battle. On the contrary, it is certain that, initially at least, such forces would require to be maintained at full strength, if not reinforced.

From this two deductions emerge. Firstly, that our main armies to meet the threat of a hot war must be additional to those required for local internal security purposes, and must be organized, equipped, trained, and situated to fulfil their primary task. They will, of course, be able to perform internal security duties wherever they are located, though this will tend to be to the detriment of their preparation for their main role. Since we can never again rely upon any period of stagnation after

mobilization before the full shock of total war falls upon us, it follows that a proportion at least of these forces must form part of our peace-time army, and must be ready to take its place alongside the armies of our Allies for the defence of those areas which must be secured at the outbreak of a hot war. In peace, therefore, the main armies of the Commonwealth must be deployed in Western Germany and the Middle East.

The second point that emerges is that, since our internal security forces throughout the world will continue to operate in that capacity after the start of a hot war, they can be organized and equipped in the manner best suited to that role, without undue concern for the somewhat differing demands of a full-scale war. To use Regular troops in this role after the outbreak of a hot war is undoubtedly uneconomical. In principle, therefore, internal security duties in peace should be carried out wherever possible by locally raised forces, such as the King's African Rifles or Malay Regiment, with only the minimum of United Kingdom or Dominion Regular units. Wherever Regular United Kingdom or Dominion units are so employed in peace, energetic measures must be taken on the outbreak of a hot war to replace such units by additional locally raised forces under leadership of the local white population, which will now become largely available for such duties. The Regular units thus relieved will become available to take their places in the main battle.

To ensure that the necessary white leaders are trained and ready to take their places on the outbreak of war, local Territorial or Volunteer Reserve units must exist in peace throughout the Colonial Empire. Incidentally, such units are valuable in providing local authorities with an additional reserve of trained man-power to meet any excessive disorders in peace.

Organization of the Land Forces

A reasonably clear pattern of the peace-time organization of our land forces has now emerged.

Our main armies, organized in complete formations and with suitable administrative backing, will be disposed in Western Germany and the Middle East. In peace, the bulk of these forces must necessarily be provided by the United Kingdom, but, in view of the extra commitments which have devolved upon this country in consequence of Korea and the unsettled state of the Far East, it is of the utmost importance that the Dominions of Australia, New Zealand, South Africa, India, and Pakistan should take some of the burden off the United Kingdom by providing in peace contingents for the Army of the Middle East, the security of which area is of particular importance to each one of these nations.

In the other territories for which we are responsible, particularly the African Colonies, Malaya, Hong Kong, and the West Indies, local security forces will be required in strength appropriate to the danger of unrest. Such forces should be composed predominantly of locally raised personnel under white leadership.

Since it would be impossible to provide in every area forces adequate to cope with the most serious degree of unrest that might occur, or to counter any fresh outbreak of the cold war, it will be essential to maintain in peace reserve formations capable of reinforcing any threatened area. To provide these formations from our main armies would be the most economical method, but such a solution would involve the risk of seriously weakening our forces in the decisive areas at a critical time ; an event which might well be the main purpose of the enemy in provoking unrest at some less important place.

To be fully effective, such reserve formations should be capable of being moved at short notice by air to any point in the world. Ideally, therefore, they should be linked to an equivalent air transport force, although such a force could not be restricted entirely to operating with the Army. The most suitable type of army formation to fill this role would be the airborne division, which would have the added advantage that the training commitment would enable increased utilization to be made of the air transport force. These reserve formations should be located in the United Kingdom for the following reasons. Firstly, this is the area best equipped with airfields. Secondly, this would be the most central location for the transport air forces so as to allow them to undertake other tasks as necessary. Thirdly, since the peace-time requirements already discussed require the great bulk of our land forces to be stationed overseas, the presence of these reserve formations in the United Kingdom will provide at least some opportunity for service at home.

So much for the peace-time dispositions of our Regular forces. In support of these will be the formations and units of the Territorial Army and Supplementary Reserve, increasing in effectiveness each year as the flow of National Service men passing from their Regular to part-time service reaches its peak. It will, of course, be upon the Territorial Army that we must rely for the rapid expansion of our hot war forces on mobilization, as well as for the provision of the great bulk of the units required for the anti-aircraft defence of the United Kingdom. The Territorial Army and Supplementary Reserve must provide, not only complete divisions, but also the large number of additional fighting and administrative units required in a hot war behind the divisions, and for which there is no room in the peace-time Regular Army.

If we are to survive the opening stages of a hot war, it is essential that these units and formations, together with the reserve formations of our Allies, should be fully battle-worthy from the first day of war. This will never be achieved under the present system of annual camps alone. It is imperative that in 1952, and at regular intervals thereafter, Territorial formations and units should be called up for additional training at brigade and divisional level, and to take part in full-scale exercises alongside Regular formations.

On mobilization there must be overseas a great increase in the number of locally raised units with the object, not only of relieving Regular forces so that these can strengthen the main armies, but also to provide certain additional formations which may take part in the main battles or, more probably, will undertake second-line duties for the ground or anti-aircraft protection of vulnerable areas and communications, thus releasing the maximum number of first-line units for active employment in the main battle.

In the Dominions, similar action will be necessary, with the object of providing as early as possible the maximum number of fully trained formations for the main battle areas, particularly the Middle East. In the case of Canada, however, it would be more logical if her man-power were devoted to raising additional formations for the European battle front.

Air Forces—A Comparison

Air force requirements for a hot war can be divided into the following categories:—

(*a*) Fighter defence forces for the protection of the United Kingdom and other important areas.

(*b*) A strategic bomber force.

(*c*) Tactical air forces for support of the land forces.

(*d*) Maritime air forces for the war at sea.

(*e*) Transport air forces for the benefit of all the Services, but particularly the land forces.

(*f*) Reconnaissance units.

In relating these requirements to those of the cold war, let us first consider the tactical and maritime air forces, since we have already discussed these in some detail under army and naval requirements respectively. It is only necessary to note that in both cases there must exist, in peace, at least a strong cadre of the forces required for a hot war. The principal task of these cadres will be to carry out essential training with the Navy and Army respectively, and to develop tactics, technique, and equipment.

There is in the cold war no active part for the fighter defence forces to play. However, so vital is it that the air defence, of this Country in particular, is as efficient in the first hour of war as human endeavour can make it, the provision and training in peace of an adequate and fully trained fighter defence force is the most important single commitment that devolves upon those responsible for our national defences.

Our strategic bombers for a future war must be capable of carrying the most effective weapons—atomic bombs—to every corner of enemy territory. Unfortunately, these aircraft are so expensive, both in money and man-power, that we can afford but few of them in peace. Their potentialities are also considerably in excess of what is normally required in a cold war, except in so far as their very existence is a powerful deterrent to enemy aggression. Furthermore, in view of their expense, we can ill afford to fritter them away on minor tasks which can be as effectively, and far more economically, carried out by light bombers or fighter-bombers, both of which categories will be an integral part of our tactical air forces.

It is not within the scope of this paper to consider the problem of integration of armaments among the Allies, but it would appear at least doubtful whether, in view of the expense and industrial effort involved, this Country is justified in producing—in peace or war—weapons of which our output will necessarily be extremely limited. It is for serious consideration whether in fact the United States of America should not be the only country to produce and operate strategic bombers on behalf of all the Allied nations.

As has been shown by recent events in Persia and Egypt, of all types of air forces the category most needed in the cold war is that of transport aircraft. If we are to make the most effective use of the limited land and air forces likely to be available in peace, it is essential that we possess both the aircraft and organization to be able to move army and R.A.F. units about the world in considerable numbers as rapidly as possible. The requirements of all three Services for transport aircraft will be equally acute in a hot war. There is thus no real conflict between the cold and hot phases; transport aircraft are a prime necessity in both.

Without embarking on details, it can be stated that there is an urgent need for adequate air reconnaissance units in peace, which requirement will be vastly intensified for a hot war. Here, too, there is no conflict.

Composition of the Air Forces

The pattern of the peace-time air forces now begins to emerge.

In the United Kingdom we shall require fighter defence forces virtually at hot war strength. The greater part of these forces will consist of Regular units, but the

Volunteer Reserve will provide a valuable supplement, not only of combat squadrons, but also of control, reporting, and warning units. In vital areas overseas, such as the Canal Zone and Singapore, equivalent fighter defence forces must be provided in peace on a scale appropriate to the threat.

We shall require in Western Europe a considerable tactical air force working alongside our main armies in that theatre. The strength of such a force should be adequate to provide the support needed by the land forces on the outbreak of war, while the organization should allow of rapid expansion on mobilization. This force will include day and night fighters, ground-attack, light bomber, and reconnaissance aircraft. The cadre of a second tactical air force to operate in the Middle East theatre should also exist in peace.

At home, Coastal Command must provide in peace the nucleus at least of the powerful maritime air forces that will be essential for the successful prosecution of a hot war at sea. The expansion of this force on mobilization will be on a vast scale. Equivalent smaller maritime air forces will be required in the Middle and Far East theatres in a hot war, but, in peace, these need be only on a very small scale.

For the transport air forces, both in peace and war, three separate types of aircraft will be required. The first of these is the " strategic trooper," capable of flying a considerable number of men with their personal weapons and kit over long distances at high speeds. The second type is the " tactical transport," capable of carrying the majority of military loads and of parachuting men, supplies, and heavy loads, including guns and vehicles. These aircraft must be capable of operating from improvised airfields and their main requirements will be good take-off and landing characteristics coupled with ruggedness, rather than extreme speed or range. The third type of aircraft is the helicopter.

The size of such a force in peace will necessarily be severely limited, but, to be of any real value, the " strategic trooper " element should at least be able to transport in one lift the fighting elements of one brigade group—say 4,000 men or 100 forty-seater aircraft. The " tactical transport " element should be at the very least capable of lifting the men, weapons, and fighting vehicles of one battalion group. Such a task would require about 40 freighter-type aircraft. The helicopter element should be as large as can be manned and produced.

As has previously been suggested, the need for a strategic bomber force in peace is perhaps the most controversial aspect of the problem of air forces. There are strong arguments to support a case that it is beyond the capacity of this Country, committed as it is to a continental strategy, to afford the burden of a large strategic bomber force, in peace or war. On the other hand, there are powerful opposing arguments and, since on balance it appears unlikely that the responsible authorities in this Country will be prepared to surrender our right to possess such weapons in a hot war, it will be essential to possess at least the nucleus of such a force in peace, albeit on a very small scale. With the flexibility conferred on such a force by the range of the aircraft, it can most conveniently be concentrated in the United Kingdom, but must be sufficiently mobile to be able to operate from other bases such as the Middle East.

Our final air requirement in peace is for reconnaissance aircraft on a scale sufficient to provide the intelligence required by all three Services and the economic experts.

CONCLUSION

It will thus be seen that under present circumstances the conflict between the requirements of the Services for hot and cold wars, though considerable, is by no means insoluble. It will be seen that in arriving at the most suitable composition of our forces, it has in each case been necessary to provide in peace considerable forces not ideally composed to meet the needs of the cold war, but which must exist if the British Commonwealth, with its Allies, is to survive the opening phases of a hot war if and when it comes.

The fact that the task of reconciling the conflicting needs of the cold and hot wars has not proved more difficult is, of course, mainly due to the exceptional circumstances now prevailing, which have forced us to build up in peace, not so much the weapons we ideally require for the cold war, but rather the basis of the forces we must have from the outset of a hot war. In a normal period of peace-time parsimony this would not have been possible.

However, there can be little doubt that in fact this course is the best solution to the problem. Whereas hot war forces can be bent to the temporary needs of the cold war, it would be criminal folly to weaken in any degree our potential hot war forces to make them more suitable for meeting some passing cold-war commitment. Once again, the conclusion that stands out above all others is that the best solution to the problem of the cold war is to provide the Allied nations in peace with hot-war forces of a size and quality that will effectively deter the potential aggressor from ever transforming the cold war into a hot one.

ROAD DENIAL

By Major M. L. Crosthwait, M.B.E., R.E.

DURING a withdrawal, there are two main ways by which, through creating obstacles, an advancing enemy can be delayed. There is first of all the stop line, the river or whatever it may be, where, by destroying all the bridges, the enemy is forced to deploy and to stage a large scale bridging operation. This aspect, with its careful arrangements for preparing the bridges for demolition, the arrangements for giving the order to blow, the provision of infantry bridge garrisons, etc., receives a lot of attention both during paper schemes and schemes with troops. The other aspect, how best can an endless series of obstacles be created so that the area between one stop line and another is effectively blocked, receives very much less attention, possibly not as much as it should.

The latter problem is not an easy one. In short, it can be called " Road Denial." It is a problem of which the Germans became past masters at solving. The object of this paper is to consider this problem, and in order to do so there seems no better way than to discuss the German methods.

A Little Verge Mining

Our own manuals acknowledge the fact that during a withdrawal mines should be placed along the verges of the road or at bottle-necks " utilizing a small party of sappers with the necessary mines and equipment," and that " the rear guard mobile troops should contain an engineer element for subsidiary demolitions and mining." It would seem, however, that something more than a " small party of sappers with the necessary mines and equipment " is required, if anything more than a little verge mining is to be produced.

After all, the main aim is to secure a respite before the enemy catches up again. The contrast between enemy transport flowing along the axis roads unimpeded and the same transport reduced to the pace of a sapper walking on ahead with a mine detector, and lagging many miles behind the enemy spearheads, needs no emphasis. And lag it will if the engineers are given a real chance to tear the road system to pieces as the withdrawal proceeds.

The German Effect

No one who had first hand experience of following up a German retreat can forget the thoroughness of the German methods. Every road and side-track was blocked. Even the most insignificant cart track was likely to have had a booby-trapped tree felled across it. Culverts, craters, mines, trees, booby traps, endlessly some sort of obstacle was to be expected. Finally, to arrive at a major obstacle—the 250-feet span broken bridge or whatever it was—was almost a relief. At least everyone knew what they were up against. There was nothing more disheartening to a conscientious engineer squadron commander than to have a vehicle blown up and a life lost in some obscure place which his sappers had already checked to the best of their time and ability. How was all this organized ?

The Source of Information

It is difficult, seven years after the war, to get hold of German training manuals. German practice can often only be found out by asking a member of the former German Army, if one with the necessary knowledge can be found. The information

on which this article is based was given to the author by a former captain in the German Pioneers.

This man was a member of the " Div RE " for most of the war. Some of his experience was with Rommel's armoured division in France, most of it was with a German infantry division in Russia.

The divisional pioneer battalion was organized very similarly to our divisional engineers. It consisted of three companies (each approximately 210 men), each company being made up of three troops, each of 48 working numbers. Each troop had four sections (gruppe), each of one n.c.o. and 12 men. Each company was affiliated to one of the infantry regiments (brigades). There was also a field park element, including bridging train, in the battalion. The tasks of the divisional engineers were similar to those found in British practice.

From the Top Down

One can well imagine from seeing the effect of German road denial demolitions, that their execution did not depend, as with us, almost wholly on engineer initiative. The business of creating as much delay as possible was planned from the top and given as much priority and thought as the creation of the next defensive line. The General Staff was well aware that the engineers could not produce obstacles systematically across the whole front and in depth, without being given time and resources, and the requirements and convenience of other arms were often sacrificed so that this could be done. It was done in two main ways.

(*a*) It was an accepted fact that the bulk of the divisional engineers would be required initially for this scattered demolition work. This would always take priority over the preparation of the next defensive line and, if it was at all possible, over the preparation of major stop lines. This generally meant that stop lines were prepared for demolition by army troops and then handed over to divisional firing parties.

(*b*) Once the time-table of the withdrawal was settled, the General Staff would issue on a very wide scale (as can well be imagined) a map showing which roads would be closed to *all* traffic from which times. This would be done either by marking the roads in different colours, those coloured red being permanently closed, those coloured blue being open until H–8 hours, those coloured green until H–16 hours, and so on, or whole areas would be coloured in, areas marked in certain colours being only passable up to certain times.

On receipt of these maps, a unit which was harboured in an area which was to be closed at a certain time, would have to move before that time. If it did not, it merely got mined in. Special provision was generally made for gun areas, but all other units had to move their harbour areas in accordance with the map. About this there was no argument, and everyone accepted that fact. The engineers therefore had time progressively to create obstacles over the whole front until they were only left with the final withdrawal routes.

Thus the operation was properly phased, the engineers had proper time to carry out their work, and by the time the rearmost troops began to move back, only a minimum number of engineers were required in the forward areas as there was only the minimum of last minute demolitions left to do. The remainder, by this time, would have moved back to join in preparing the next defensive positions or would have taken over the next stop line.

Control During the Final Phase

As the rearguard began to move back, a typical picture would be as follows. It is assumed that one regiment is conducting the withdrawal and is coming back on two routes.

The two routes would still be open but all demolitions on them would have been prepared. These would include :—

(i) Mines in the verges and in the road. These mines would already be in place and camouflaged. All that remained to be done would be to withdraw the safety pins. (*Note.*—This referred to Teller mines only. A teller mine which had not had the safety pin removed would take the weight of the heaviest vehicle. It was therefore safe to bury them in the road. This drill was not possible with some of the later German mines.)

(ii) Craters and trees prepared ready for firing.

(iii) Farm carts, etc., ready for pulling across the road with the booby trap in place, only needing connection to the trip wire, etc.

(iv) Side turnings already blocked and mined.

Craters, mines, blocks, etc., would be laid in groups, one group perhaps stretching 80 to 100 yards. Normally two pioneers would be left to look after each group. Thus there might be eight to ten groups (16 to 20 pioneers) strung out along the road. No reliefs were provided for the sentries and these men might be on duty a considerable time. They fed themselves as best they could.

One troop could cover a maximum of 15 to 20 miles of road. This would naturally mean that the groups of demolitions would be far apart. If the withdrawal was less than 20 miles, then the groups could be closer together.

The first group would include the pioneer officer in charge of the demolitions on that particular road. He would have a wireless set on the rearguard commander's net. He would also have written firing orders. These would state on whose orders the demolitions were to be fired, mines armed, etc. (normally the commander of the rearguard). The firing orders would include a space for the signature of the rearguard commander or the officer who was acting on his behalf.

Firing of the Demolitions

As the rearguard passed the first group, the rearguard commander would give orders (in writing) for the demolitions to be carried out and the pioneer officer would then give the orders to blow, arm the mines, etc. The engineer party, having carried out the task, would then come on back with the rearguard. They would have their own vehicle, often a tracked armoured troop carrier in which was the wireless set, to do this.

As they went back they picked up the pioneers who had been guarding subsequent groups, and the whole party, as required, would arm mines, set off demolitions, etc., if to do this quickly was beyond the capacity of the original sentries. The pioneer officer would get his order to blow confirmed in writing for each group of demolitions. The time of demolitions was always noted.

If the engineer vehicle got too full, any pioneers subsequently picked up were carried on vehicles of the rearguard, or, alternatively, another engineer vehicle would be stationed along the road at some convenient spot to bring them back.

Thus the final picture would be that which so often faced the advancing troops. The routes along which the German rearguard had withdrawn would be effectively blocked. Side roads and tracks between these routes would also be similarly blocked and mined.

Familiarity and Discipline

This drill, as related by this former German officer, seemed to be very simple and invariably effective. The officer, when questioned more closely as to whether things really went quite so smoothly as this, seemed surprised that anyone could possibly see any snags in it. The fundamental advantages seemed to have been as follows :—

(*a*) Because the engineer side of " demolitions in the withdrawal " received so much attention from the top, familiarity with the drill spread downwards throughout the division. *Everyone* knew, whatever his arm, exactly how they were carried out, what the method of giving the orders to blow was, the respective responsibilities of the engineers and the rearguard, and so on. It was just as much a part of the divisional battle drills as deployment or movement by road.

(*b*) Apart from this familiarity and because it was so important, everyone was scared of it going wrong. There was normally no question of a n.c.o. at an isolated group getting panicky and setting off his demolitions too soon, or of the officer in charge not making sure he was getting his orders correctly. Apart from the fact that he was as familiar with the composition and command of the rearguard as the rearguard was familiar with his problems, it was literally as much as his life was worth to allow things to go off too soon. To let a withdrawal demolition go wrong due to carelessness, inefficiency, or " wind up," could lead to a very quick and early grave.

The Penalty of Disobedience

The following story illustrates this latter point. During the Russian retreat, the above-described drill was being carried out down a brigade withdrawal route. At one point a small bridge was prepared for demolition. Alongside the bridge was a ford, the approaches to which had been mined. A n.c.o. with two men was in charge of this group. The n.c.o. thought he would save time by arming the mines on the track leading to the ford, leaving only the bridge to be blown when the rearguard passed. The n.c.o. was unfortunate in that the brigade commander himself came along at that moment and noticed what was happening. The n.c.o., on admitting that he had had no orders to arm the mines, was immediately found guilty and summarily shot by the brigade commander's liaison officer.

Things have less chance of going wrong if the wages of disobedience is death.

Conclusion

That the Germans were not infallible in their withdrawal demolitions is, of course, true. But instances like Remagen Bridge do not detract in any way from the German skill in road denial. As we ourselves have yet to evolve a good answer, the German methods at least suggest a line of thought.

THE PROBLEM OF CIVILIAN REFUGEES IN A EUROPEAN WAR

By Lieut.-Colonel Oswald Stein, D.S.O.

IN a defensive war in Europe, the problem of civilian refugees must be solved quickly by the N.A.T.O. Powers, if chaos is to be avoided on the lines of communication. The memory of the tragic misery on the roads of northern France in the Summer of 1940 underlines the importance of this problem. Not only did the congestion caused by the bombing and machine-gunning from the air of the roads filled with refugees cause several divisions of the French Army to arrive in the forward areas too late to stop the gaps through which the Germans were pouring, but some divisions from the centre of France failed to get through at all. To all this was added the constant delay and interruption caused to the distribution of supplies, ammunition, petrol, and oil to the troops already engaged, and to their movement during the course of the battle.

The object of this paper is not to provide a complete answer to the question, but rather to attempt to set out the factors bearing on the matter and the points that require detailed study before a viable plan can be formulated.

The problems to be studied can be grouped under three heads, as follows :—

(*a*) What are the numbers of refugees likely to be involved ? On what parts of the front will they be found in the greatest density ? In which directions will their unorganized movement most probably be headed ?

(*b*) How will this unorganized movement be taken under control ? How will it be diverted to, and kept moving along, pre-selected and allocated roads ? What measures will be necessary to ensure the maintenance, health, and safety of the refugees, and for the prevention of disorder likely to embarrass the military authorities in the execution of their plans ?

(*c*) To what destination will the refugees finally be directed ? How will they be maintained on arrival ? How can suitable workers among them be diverted to those areas where their labour is required ?

No attempt can be made to find even an approximate answer to these questions until it is clear what countries are likely to be the object of attack, and until some indication of the enemy's plans has been given. It may, however, be assumed that a considerably higher proportion of the population of the invaded or threatened territories will take to flight than was the case during the Nazi invasion in the early stages of the last war. This assumption is based on the belief that, in 1940, many persons of anti-Nazi sympathies were, at the outset, none the less of the opinion that they had nothing to fear personally from German occupation of their homelands and that, once the tide of war had passed, they would be better situated in their own homes than as refugees. This feeling might well have less force in the event of an invasion from Eastern Europe. The fear of deportation for forced labour would be extremely potent, both in the cases of those who, for reasons of class or political leanings, might be considered hostile to the invaders, and also of those whose youth and fitness would make them desirable workers.

It would be necessary in the early planning stages to study the population figures of those districts or countries which figure in the S.H.A.P.E. defensive plans as the

probable victims of enemy attack. The main agglomerations of population must be noted and an attempt made to analyse them with the object of dividing those likely to flee from those likely to stay. It is easy to see that very many factors would have a bearing on this, and all these factors would have to be studied and brought into the calculation. The general direction of the movement would almost certainly be a prolongation of the axis of the attack, but would be subject to minor deviations due to geographical considerations.

Before we can study the allocation of roads, it is self-evident that we must first consider the ultimate destination to which the refugees are to be directed. Half measures would only lead to trouble in the event of withdrawal of the front. For this reason the refugees must be kept moving until they are well clear of the zone of the armies, and it is suggested as a subject for study that the principal concentration area might well be beyond the Pyrenees, provided this were politically possible. Suitable workers required for the war effort could either be drawn off at staging camps *en rout* or sent forward after arrival at the base.

In the light of the foregoing, and in consultation with the military staff, the necessary roads must then be allocated to refugee traffic. As the armed forces would almost certainly require practically all the first class roads for the up and down routes of their various formations, good second class roads should be chosen. Search should be made for roads having frequent stretches of open country or accessible woodland on either side to enable those needing rest or refreshment to get off the road, and also to facilitate the removal of broken-down vehicles from the highway. At all costs the roads must be kept open and the traffic on them kept moving. For this purpose large forces of traffic police on motor-bicycles would be required, together with first-aid and recovery posts. Police would also be wanted to round up refugees on unauthorized routes and to direct them to the allocated roads. Ample sign-posting should be provided.

Staging camps must be set up at regular intervals where, in addition to space for bivouacs, kitchen accommodation duly staffed, equipped, and supplied, hospital and first-aid huts or tents, doctors and nursing staff must be available, together with supply arrangements and petrol points. It is also suggested that a few mobile veterinary sections should be appointed, because, apart from the humanitarian aspect, sick or grossly overloaded animals cause intolerable congestion on the roads. Worn out animals should be slaughtered and butchers should prepare the carcases for consumption in the camps. In the British zone of Austria, after the end of the last war, the main source of meat supply for the surrendered forces in the early days consisted of the starving or lame horses of the Hungarian and White Russian forces which had been serving with the Germans.

For the maintenance of order, posts of military or armed civilian police should be established at intervals along the routes, in addition to the traffic-police referred to above.

Holding camps must be established of a semi-permanent nature at the destination, served perhaps by reception and dispersal camps at each road-head. Maintenance, medical care, and welfare must be provided by the authorities of the country of reception under financial arrangements to be made with N.A.T.O. Some form of occupational and rehabilitation training would probably be required for those who are fitted to be drafted into war work of various sorts in various Allied countries. Such drafting must, of course, be on a voluntary basis, but able-bodied men or women

efusing work should cease to be eligible for maintenance. Breadwinners of families hould be employed in or near the camps. Education and recreational activities hould be provided for the young and the unemployable.

Doubtless, if and when the emergency arises, the various voluntary societies will be ready, as always, to provide assistance for the relief of distress, by the provision of teams of skilled workers for the camps—medical units, welfare workers, trained catering staff, etc.—and will, in addition, furnish and distribute such stocks of special foods, medicaments, and clothing as may be available.

But *post facto* improvisation is not enough ; the first few days will be the critical period. It is essential to formulate plans in advance, both to prevent untold suffering amongst the civilian population and to obviate a breakdown in the mobilization, reinforcement, supply, and other logistic schemes of the armies. Such planning can only be originated and co-ordinated by N.A.T.O.

TWO-DECKER

A contemporary account of life in a man-of-war in the year 1825[1]

By Commander G. M. Bennett, D.S.C., R.N.
("Sea-Lion")

FIRST the ship, how she was rigged and fitted out down below, since there'll be few among you who've ever been aboard a ship-of-the-line. . . .

She was three-masted; fore, main, and mizen. Each mast was crossed athwartships with four yards; lower, topsail, topgallant, and royal. From each a square sail could be set; on the foremast, fore course, fore topsail, fore topgallantsail, and fore royal; on the main, main course, main topsail, main topgallant, and main royal; on the mizen likewise, except that in place of a course, a rectangular sail called the spanker was set fore and aft between a gaff and a boom. Forward between bowsprit and foremast three triangular sails, flying jib, jib, and foretopmast stay-sail could be set. Such was the full sail carried at sea in fair weather. But when greater speed was needed, as when chasing an enemy or when running before a breeze, the sail area could be increased by rigging booms which extended the yards (except the royals) and setting studding sails from them.

The highest deck, which extended forward from the square stern for nearly a quarter the length of the ship, was the poop. Here was the staff from which the ensign flew in harbour, white, blue, or red according to the grade of the admiral to whom the ship belonged; also the ship's lantern or stern-light; and around the sides, peeping through ports in the bulwarks, carronades for sweeping an enemy's decks at close range and killing the men who sailed her. Since the poop afforded the best look-out place in the ship it was here that the lieutenant on duty kept his watch when at sea. And just below it, handy for any emergency, was the captain's cabin, with a smaller one opening off it containing his bed.

The next deck below was divided in two. From the break of the poop to the mainmast was called the quarter deck. This was reserved for the officers, the starboard side for the admiral and captain, the larboard for the rest. And here was the ship's wheel, a double one, with the compass in its binnacle just before it. From mainmast to foremast there was no planking except for gangways each side. Amidships on the booms, where one could look down on the deck next below, the ship's larger boats were stowed. Outboard of the gangways were nettings for the men's hammocks where in action they afforded protection from splinters. The forecastle began by the foremast and ran forward to the bowsprit and the beakhead. The ship's brass bell in its carved wooden belfry and the tall galley chimney were there. And the bulwarks, like those of the quarter deck and poop, were pierced for carronades.

The main deck, which was open to the sky amidships, began aft with cabins for the admiral, if one was aboard. The larger had leaded windows and a gallery across the stern and around each quarter. The smaller contained a bed and wardrobe. The rest of this deck was lined on either side with twenty-four pounders, each in its wheeled carriage with tackles for traversing it as well as for taking up its recoil and running it out after re-loading. Between these two batteries were the blacksmith's and carpenter's workshops and the sick-bay.

[1] Compiled from a journal kept by one of my wife's forbears and other family papers.

On the lower deck, below the admiral's quarters, were the wardroom and the officer's cabins, each scarcely larger than the size of the cot it contained. But this deck's chief purpose was to carry the ship's heaviest guns, a battery of thirty-two pounders ranged each side like the lighter pieces above them. The rest was given up to the ship's company. They slept in hammocks slung from the beams overhead and fed at portable tables rigged between the guns, except for right forward where a fixed bulkhead served to keep out the sea which washed through the hawse-holes. This made the manger where livestock was stabled until killed to provide fresh meat for the crew. The galley was amidships abaft it.

The lowest full deck to the ship was the orlop. This had no gun ports so that neither daylight nor fresh air ever penetrated it. Yet the midshipmen lived here in the gunroom, its table being used by the surgeon in action for amputating limbs. And some junior officers had their cabins here. But for the most part this deck was given up to the purser's store rooms and to the stowage of chests, kit-bags, sails, cordage, and the tiers for the cables.

Below this deck, immediately above the keel, was the hold which was roomy enough when empty but was mostly kept filled with ballast, with casks of water and beer, with flour and salt beef. These surrounded the two magazines, one containing filled cartridges, the other powder in barrels. They had special copper doors which were constantly guarded by armed marine sentries. And for precaution against fire they were lined with felt and lit only by wicks trimmed from outside, which shone through glass windows.

She was a typical seventy-four gun ship-of-the-line of 1,500 tons burden. She was classed as a third-rate because she had only two gun-decks, unlike the three of her larger sisters, the first and second rates, whose guns might number as many as one hundred, and their tonnage exceed 2,000.

* * * * *

Now for an account of one week's duty as it went on aboard.

On Sunday morning, a few minutes before four o'clock, the boatswain and his mates were called, and standing at one of the hatchways as the bell struck eight, the officer who had had the middle watch, called out, "Turn the hands up." In reply the boatswain gave one twit with his call; his mates did the same in succession; one long whistle followed, and the boatswain roared out, "All hands holystone decks," which was echoed by his mates.

In a moment, in the twinkling of an eye, all hands started out of their hammocks, and, half clothed, rushed up the hatchways. However deep their sleep might be, however pleasing their dreams, that pipe awoke all. Moreover, the boatswain and his mates were allowed to carry "three sisters" (three canes laid up like a piece of rope), with which they lashed indiscriminately as the men ran up, and woe to him who was last.

As soon as the lower deck was cleared, sentries were placed at each of the hatchways to prevent any one from going down. The wash-deck pumps were rigged and the decks wetted all over and thickly strewn with sand. About two-thirds of the men dropped on their knees and rubbed away at the decks with holystones, while the other third supplied a fresh layer of sand and sprinkled water when required. A midshipman stood in front of the rank of men to prevent them from moving forward before every portion of the deck had been completely rubbed over. After the stones had been used for about an hour, scrub brooms were used at all parts, and a complete wash-down given with a great many buckets of water. The deck was then dried up with swabs.

By this time it was nearly five bells (half-past six). All hands were then allowed below to lash their hammocks. Seven turns was the usual number hitched round the hammock, the clews being neatly made up and the ends of lanyards and lashings left out, so that the officer at each netting might see that the necessary pointing had not been neglected. As the bell struck five, the boatswain's pipe with those of his mates again thrilled the nerves : " Up all hammocks," was the cry at each hatchway. These were instantly crowded, each man being eager to escape the disgrace of being last, and its consequent punishment. As the men were coming up, the first lieutenant was patrolling from gangway to gangway, his eye cast on all parts, observing any one whose hammock did not show the needful number of turns, or was in any other way deficient, and woe to the luckless man on whom his eye settled ; his name usually appeared on the black list the next day.

By six bells (seven o'clock) the hammocks were all stowed. The next whistle was, " Clean arms." Those men at the guns who were boarders or pikemen or small-arm men, then cleaned their arms for a quarter of an hour, brick-dust and oil succeeding holystones and sand.

At a quarter-past seven, the sentry who had charge of the glass, came up the after hatchway and reported to the midshipman of the watch it was time to pipe breakfast. The midshipman in his turn walked across to the first lieutenant, and with a quarter deck bow reported, " The quarter, sir." This officer, with an acknowledging nod, called out to the boatswain, " Mr. —, pipe to breakfast." At this the cook of each mess hurried down the hatchway to run to the coppers to get his due proportion of cocoa for the number of men in his mess. Half an hour was allowed for breakfast, the other quarter being usually employed in preparing to send up top-gallant yards, these sails having been furled during the night.

A few minutes before eight, "Clear lower deck" was the signal for all men to repair to their stations. Some of the topmen who had to go aloft, seeing a good opportunity of doubling on the first lieutenant, would slyly creep up before this and stow themselves away at the top. The others having to run aloft as the yard went up, would be nearly exhausted for want of breath before they reached the cross-trees.

When " Hands up topgallant and royal yards " resounded from all parts of the ship, the yardropes were manned, and all anxiously awaited the words, "Sway out the chains," and, " Topmen aloft sway away." At that it seemed as if the men and the yards were running a race, each man keeping his eye on the yard as it went up, anxiously looking out for any check it might meet on its way to ease his exertions. The moment a yard was rigged, the officer of the top, looking over the rim would call out loudly, " All ready," adding the fore, main, or mizen, as it might be. The master attending the chronometer came up and reported to the first lieutenant, " Eight o'clock, sir." He, putting his hand to his cap, called out, " Strike the bell! Cross away."

When this confusion was over, the next order was, " Watch below, clean lower deck! Watch on deck, square yards." Now the second part of the morning rubbing commenced. The holystones were again in requisition, this time for the tables, shelves and lower deck. Brass-work and iron-work about the mess and other parts of the deck were also well cleaned.

" Clean for divisions " was the next duty, after which the bags were stowed and the men went up on deck. Nothing could please a person, who had never before seen such a place, so much as the lower deck of a ship-of-the-line at such a time ;

the guns with all their tackling in good order, locks bright, mess shelves neatly arranged with crockery and tin ware, and the cables neatly ranged ; all must inspire the stranger with a high opinion of our Navy.

On Sunday, divisions were usually at ten o'clock. When the drum beat, every man appeared clean at his division, of which there were five consisting of one part of each watch. The first and third were the starboard watch, the second and fourth the larboard, while the fifth consisted of the idlers, that is such men as keep no night watch, carpenters, coopers, sailmakers, cooks, and cooks' mates. After the divisions had been mustered and inspected by their respective lieutenants, each in turn according to his rank reported to the captain, " All present, sir." The captain or lieutenant of Marines reported next.

Then the captain inspected the divisions, looking steadfastly at every man as he went round. And should any one, from whatever cause it might be, be found not perfectly clean or not dressed exactly in the uniform ordered, he shrunk from the captain's gaze, for he knew it must lead to punishment. Every part of the deck, as well as the men, underwent a strict examination. Even the hold did not escape the captain's scrutiny. Thus no dirt could accumulate in any part of the ship; all had to be clean.

As soon as this examination was over and the captain reappeared upon deck, the drum beat the retreat and carpenters and quartermasters were called to rig church. If the weather was fine the awnings were spread and the service took place on the quarter deck, stools being brought up from below for the men to sit on, while chairs were placed for the captain and officers. Flags were neatly disposed round the capstan and in the ports to prevent draught as well as to adorn the place of worship.

When all was ready, the bell tolled just as on shore, and the church pendant was hoisted at the gaff-end to announce to all other ships that divine service was going on and no boats were to board during that time. The tolling was to warn all hands to repair to church where, when all were seated and quiet, the first lieutenant reported to the captain who performed the service, there being no chaplain in the ship.

During it all was quiet, but when ended all was for a few minutes bustle and confusion. The whistle went, " Down all stools, up spirits." At sea, all the officers then took meridian altitude and the master, having ascertained by the sun that it was twelve o'clock, went to the captain and reported, " Twelve o'clock, sir." " Strike the bell eight ; pipe to dinner," the captain would order, and in one moment the hands were below.

One bell (half-past twelve) was the seaman's favourite bell, for it was then that grog was piped. The cook of each mess repaired to the grog tub, where he received one and a half pints of the mixture for each man in his mess ; yet although he got so much for each man, it by no means followed that he drank all that. For each mess had a small measure much less than the right one ; one of these small measures went to each man. The rest, which in some messes was nearly half the full number, was called " over-plus " (or " plush "), and on this the two cooks of each mess would sit and enjoy themselves until, sometimes, those who in the morning were sworn friends ended the day in fighting. Since each man in his turn acted as cook, every man in the mess had his chance to get drunk. Many men who have been years in a ship, well behaved and respected, on that one day blast their character, for in the

gratification of the moment they commit deeds at which in their sober moments they would shudder.

It was a positive order in the — that the tin ware should be kept perfectly bright, or it was not to be kept in the mess. On one occasion a seaman, a knowing sort of an Irishman, determined that his mess should outshine all others, got some mercurial ointment and by rubbing it over the tin, gave it the beautiful gloss of polished silver. The first lieutenant, on looking round the messes, saw the brilliance of those pots, and went and found fault with all the rest, telling them the fortieth mess outdid them all. No one could form an idea by what means this gloss had been obtained. But those very pots were used every morning for breakfast, and in about a week every one in the mess complained of sore gums and loose teeth, and the effects were visible upon all. It is needless to add that the mercury caused it.

Dinner ended and the deck swept up, no other duty was begun ; nothing stirred till after four o'clock in the afternoon. The seamen walked about, or lay on the decks, some telling tales, some plaiting grass to make hats, some few to read or write.

A few minutes after four the confusion began again. " In lower deck guns. Out yard ropes, reeve gantlines, and clothes lines," was piped, ready for scrubbing hammocks in the morning. At five came supper ; again the grog was piped, and the men enjoyed themselves. But it not infrequently happened that in the very middle of their enjoyment, the drum beat to quarters where every man was mustered at his gun and in his proper number. The guns were examined to see all their tackling was secure and in good order. The men were also examined to see that they were sober.

To a person not acquainted with the Navy, the various schemes the drunkard uses to obtain an extra quantity of grog must appear almost incredible. No trouble is too great, since they cannot resist the temptation. Men who would shrink from a dishonest action, and who might be trusted with sums of money, will steal a bottle of rum. The captain of the — was returning to the ship in his gig about eight at night. On coming up the side he sent for the master-at-arms, told him that he had seen one of the boat's crew hide some bladders of spirits in a bag under the head sheets, and ordered him to seize them. In the meantime the owner of the spirits had climbed into the maintop and sent a fishing line down with a strong hook. One of those in the boat then hooked the bag on and at the moment the master-at-arms was stretching out his hand to clasp his prize, the man aloft pulled up and the bag vanished from view. Astonished at the manner in which his prize had disappeared, the master-at-arms went on deck and reported the whole affair to an officer, saying the rum had been spirited away!

Many more instances could be related, but one will be sufficient to show the many schemes practised by seamen to obtain spirits. Some years ago while a ship was taking in four months' provisions, some small barrels of spirits were sent on board. As the maindeck was already well filled with casks, these small barrels were rolled upon the fore gratings. Some mischievous fellow got hint of it, went to the cooper, borrowed his centre-bit, and bored a hole into the bottom of the cask through the grating, while a messmate held a bucket under it. Bucket after bucket thus disappeared. Towards evening half the ship's company were drunk, and there was a quantity of rum in all parts of the lower deck. No one could tell whence it came, but the next day when the casks were struck down, one was found empty. Several men were charged with the crime, but as they kept their own counsel, there was no proof against them, so they escaped ; and the purser lost fifteen gallons of rum!

At eight at night, the boatswain and his mates would pipe down, and within a very few minutes every man was in his hammock. Chatting was allowed, or at least not noticed till one bell (half-past eight), but when the jawing bell was over, nothing was heard or seen through the night, save the half-hourly visits of the master-at-arms, and the regular " all's well " of the sentries as they walked their lonely posts. Thus ended the Sabbath in a ship-of-war.

On Monday morning at four o'clock, the shrill whistle again awoke the sleepers and cut short their dreams. The hands then scrubbed hammocks and washed clothes. As much fresh water was served out to each man for this as the vessel could afford, at the most half a gallon each. As soon as the clothes were hung up, the decks were washed down and hammocks piped up. The same routine then followed as on Sunday, except that divisions were earlier. After this muster was ended the drum beat to quarters, and one division went to great gun exercise until six bells (eleven o'clock). Another division went to cutlass or musket drill, while the rest of the ship's company was employed about the ship as might be required. After dinner another portion of the crew went to drill at cutlass or musket, and that ended the work for the day.

Tuesday in most well regulated ships was appropriated to boat exercise. Every boat was equipped in fighting order, the larger ones such as launches, barges, and pinnaces, with their guns and carronades, the smaller ones with muskets, cutlasses, and pistols. And when there were other ships in company, each sent from seven to nine boats which, with the flagship's launch as commodore, formed a pretty mosquito fleet.

Wednesday was for sail exercise, at least so it was in the —. The forenoon was spent in reefing, furling, and shifting the whole suit of sails, and perhaps the topsail yards were sent down and up again once or twice.

On Thursday, making and mending clothes occupied the whole day, when each man had a fair opportunity of repairing damages in his kit, and preparing for any future examination ; also of examining his ditty bag, and having a view of all the little presents he had from his friends or sweetheart before he left home, and reading over the love letters of Poll or Sue.

Friday was general quarters when every gun in the ship was manned and exercised, being sometimes fired with shot at a target, at others with blank cartridge, for which a fair proportion of powder was allowed half-yearly.

Saturday was a general cleaning day below, and for white-washing the holds and cockpit. Any slight repair the rigging might require was done on this day. With evening came, " Sling clean hammocks," and thus ended the week.

* * * * *

A man ordered a flogging by the captain or by court-martial was dealt with in this manner. At six bells of a forenoon, the hands would be called aft to witness punishment. The marines fell in on the poop, the officers mustered on the quarter-deck, the ship's company assembled on the boats and booms. The captain would order " Rig the gratings " and the carpenters obeyed. The offender was then called, ordered to strip and, arms above his head, seized to the gratings. Whilst all bared their heads the captain read the Article of War which had been infringed, and from a red baize bag one of the boatswain's mates would produce the short wooden stick with its two foot lengths of tough knotted cord. At the next order, " Do your duty," he would begin to flog the offender's bare back with this cat-o'-nine-tails.

Some seamen could " get a red-checked shirt at the gangway " without crying aloud but only if the punishment was restricted to a dozen lashes, though they cut deeply into his back and left it a horrible red slough. But agonized screams were more common, especially since three dozen was the usual punishment and as many as three hundred sometimes awarded by a court-martial. A man had no more than his messmates' tots of grog, saved up from the previous day, to help him withstand such torture. And when it was over there was no more than a poor mangled body resembling raw veal, to be taken to the sick bay and the care of the surgeon.

* * * * *

Here is a more cheerful recollection, of dinner in the gunroom where it was the custom, when the table was cleared, for each midshipman to entertain the guests with a song.

When in the cockpit all was grim
And not a Mid dared show his glim,
A youth was all alone :
He scratched his sconce, survey'd his clothes,
Then took the other cheering dose,
And thus began his moan :—

" A curse light on that fatal day
When I from home was led astray,
In this dire hole to dwell :
If I had in my country stay'd,
I then had learnt some useful trade
And scorn'd the white lapel.

" When first on board the ship I went,
With belly full I was content,
No sorrow touch'd my heart :
I viewed my coat so flash and new,
My gay cockade and hanger too,
And thought me wond'rous smart.

" But soon, too soon, my cash was spent,
My hanger pawn'd, my coat was rent.
My former friends I miss'd :
And when of hardships I complain,
My messmates swear 'tis all in vain
And ask what made me list ?

" Shiv'ring I walk the quarter deck,
And dread the stern lieutenant's check,
Who struts the weather side :
With glass and trumpet in his hand,
He bellows forth his harsh command
With arrogance and pride.

" But hark ! I hear the caitiff tread ;—
Another dose, and then to bed,
of ev'ry joy bereft."
He shakes his bottle with a flout,
The poor half-pint was quite strain'd out,
Not one kind drop was left.

The youth with rage indignant burns,
Into his hated hammock turns,
Alas ! not long to sleep :
The quartermaster, with hoarse tongue,
Shakes him and says the bell has rung :
He's roused the watch to keep.

Rising, he cries, " Tip us a light,
Old Square-toes ; here, how goes the night ?"
" Why, sir, it rains and blows " ;
" O ! damn my eyes, I hear the rout ;
" D'ye spy a stray greatcoat about ? "
Then swearing up he goes.

All midshipmen, from the beginning of time, have complained thus. And there's small doubt that as long as Britain has a Navy, they'll sing a like tune.

THE WAR IN THE PACIFIC, 1945

THE LIBERATION OF THE PHILIPPINES[1]

By Lieut.-Colonel H. E. Fooks, O.B.E.

The last article in this series, published in the Journal *for August, 1951, dealt with the operations which resulted in the occupation of Leyte Island and Mindoro.*—Editor

THE main reason for MacArthur's occupation of Mindoro was to establish air bases from which his air force could cover Luzon. His main objective was Manila Harbour, a base from which he would make a bound forward towards Japan.

Luzon, with an area of 41,000 square miles, is the largest of the Philippine Islands. It is also the most densely populated and contains the capital, the seat of government, Manila. It is covered, except in the southern centre, with rugged mountains which run up to 9,000 feet in height. The southern portion of the island contains the central plain which, from an economic point of view, is the most productive region in the whole of the archipelago. A large portion of the North of Luzon, in spite of 400 years of military occupation, first by Spain and then by America, is still unmapped country, the home of Igorot head hunters and stone-age pygmies. Manila is a city with a population of over 600,000 ; its harbour is famous all over the Far East. It is deep, well sheltered, and has a circumference of over 120 miles. In 1565, it was taken by Spain, who held it until it was captured by the United States in 1898. The Americans, having noted the weakness of the harbour's defensive system, at once took steps to change it, and by 1901 had made so many improvements, and so modernized the armament of its forts, that from seawards, at least, it was considered impregnable. For the next 40 years very little was done to keep the armament up to date, with the result that when the Japanese assaulted the defences from the landward side, the harbour soon fell into their hands in spite of a very gallant defence. They used it as a supply base for all their forces in that area which lies South of an East and West line running through Manila.

At the end of the battle for Leyte Island, it was obvious to the Japanese that MacArthur's strategy, of which they had had two years of practical and painful experience, envisaged the capture of Luzon. When they had invaded the island, they landed their army in Lingayen Gulf on the West coast and then marched South on Manila. The gulf is U-shaped, about 20 miles broad and 30 long and it lies 100 miles North of Manila. On the East side of the U, there are sandy beaches sloping down to deep water, ideal conditions for landing craft, and it was here that the Japanese invaders came ashore, The other two sides of the gulf, owing to surf, shallow water, and swamps, do not provide good beaches. In fact, in the opinion of the Japanese General Staff, landings here were considered impracticable.

The defence of Luzon was in the hands of General Tomoyaki Yamashita, who commanded a force of some 250,000 men. This force would have been even greater, but for the fact that five of his divisions had been sent to assist in the defence of Leyte, and these, unfortunately for him, had been destroyed in the fighting which had ended in an American victory. One of these, the 26th Division, had been caught in Ormac Bay by U.S. bomber aircraft while they were disembarking. The troops had landed, but as their guns and stores were sunk in their transports before they could be put ashore, they were not of much use as reinforcements.

[1] A sketch-map faces page 400.

Amongst the documents captured with this division was Yamashita's appreciation of the situation and notes and instructions to his divisional commanders.

Extracts from the documents read as follows :—

" If the enemy plans a landing in Lingayen Gulf, we must expect him to land on the West coast of Luzon North of the gulf, from where he will advance South by stages. If the enemy is allowed to penetrate into the central Plain of Luzon, he will be able to manœuvre his overwhelming superior armoured forces. We would have great difficulty in checking them or drawing them into a decisive engagement. Since the coastal sector described above is comparatively confined (by high mountains at the back of the coastal strip) the enemy would not be able to deploy his force there. Therefore, if we check the enemy in the vicinity of the lower part of the East side of Lingayen Gulf, we can stop his advance into the central plain."

In another document, entitled " Advice to Officers," he says :—

" Realize that in the present war material power usually overcomes spiritual power. The enemy is clearly our superior in machines. Do not depend on your spirits overcoming this enemy. . . . Devise combat methods based on mathematical precision. Then think about displaying your spiritual power." It was pretty sound advice !

MacArthur had every intention of landing in Lingayen Gulf, but in order to deceive the enemy and keep him guessing, he arranged for several feint attacks to be made in different places along the South coast of the island. Guerilla forces, already active on Luzon, were employed in blowing up bridges and cutting communications in the area South of Manila; at the same time minesweepers were employed in sweeping Balayan, Batangas, and Tayabas Bays ; and, finally, transport planes flew over the area, dropping dummies to simulate an airborne invasion. The enemy reacted to all these scares by rushing troops to the localities so threatened ; and Luzon radio, mainly for home consumption, announced the news that American invasion forces had been driven off with great loss.

At the end of the war, Yamashita was interviewed and asked about these feint attacks. He replied that he was never for one moment taken in by them. That may or may not be true, but the fact remains that when the invasion actually took place only two divisions of the defending army were in their defence areas. The remainder were caught on the move, either hurrying to some point where there had been an alarm, or back to their defence area. This resulted in considerable confusion, as columns crossed each other, roads were blocked, communications jammed, and divisions came into action piece-meal. MacArthur's forces were landed as he had planned, not on the East shore of the gulf, where the landing facilities were so good and where the enemy had hoped to receive him, but on the southern and western beaches, the ones that the enemy had pronounced as impracticable. What is more, thanks to the confusion already described, his forces had comparatively small casualties when they disembarked.

The Navy's first task for the invasion of Luzon was to carry the Army and to protect it during the journey. This meant moving troops from the Solomons, New Britain, and from several places, such as Hollandia, situated on the North coast of New Guinea. Admiral Kincaid's 7th Fleet was responsible for transporting the force, the Sixth Army, and for landing it where required. The escort was the responsibility of several people. Admiral Oldendorf, the man who had smashed the fleets of Nishimura and Shima in Leyte Gulf, was responsible for guarding the

convoys with his battleships which, although old, were still formidable. They, too, were responsible for giving covering fire and bombarding before troops were landed. Oldendorf's battleships, accompanied by a group of minesweepers, were ordered to reach Lingayen Gulf three days before the main troop convoys, so as to sweep up any mines and to soften the land defences. Admiral Halsey's 3rd Fleet had to guard against any possible attack by the enemy's main fleet[2] which, although it had been badly knocked about and scattered ten weeks before, might, if it could be reassembled, do considerable damage should it encounter the long stretched out transport convoys. American submarines were stationed in large numbers all around the possible fighting area.

The Japanese air force was divided into two arms, the naval and the army. Of these, the more formidable was the naval arm based on Formosa, North of Luzon; though there were many airfields in Luzon occupied by the army. The American plan for air cover was to share the responsibility between the carriers of Halsey's fleet and the augmented air force of MacArthur's Army under General Kenney (5th Army Air Force). A line was drawn East and West through Lingayen. North of the line was Halsey's area, to the South of it was Kenney's, but the proviso was made that Kenney could deal with Formosa whenever Halsey's Fleet was otherwise occupied. The 14th Air Force and the 20th Bomber Command, based on the mainland of China, were responsible for the China Sea; the 21st Bomber Command, based on the Marianas, looked after the northern seas; and finally Kincaid's Fleet had its own escort carriers, those which Kurita failed to destroy when he had them at his mercy on 25th October.

The Sixth Army, which had to be carried, was under the command of General Krueger. It consisted of the I and XIV Corps, each of two divisions. Also, in reserve, were an Armoured Group, a Regimental Combat Team, and a Ranger (Commando) battalion.

The fleet under Kincaid included 685 ships, ranging from battleships to minesweepers, and converted luxury liners to landing craft of every type. The planning for the operation in regard to this fleet was very similar to that for the invasion of Leyte. First came the minesweeper group, which included munition ships and tankers, 40 miles astern of which were Oldendorf's bombardment ships. Then followed the I Corps, carried by Vice-Admiral Barbey in two groups, and behind were the XIV Corps and the reserve, carried by Vice-Admiral Wilkinson. The route selected was not the shortest. That route, once all the groups had assembled off Leyte, was up the East coast of Samar and through the San Bernardino Straits to the North of Mindoro; but it entailed risks of bombing from all the enemy-occupied islands in the Visayan Sea, not to mention Luzon, and for that reason it was abandoned in favour of the longer passage via Surigao Strait, Mindanao Sea, and then between Palawan and Mindoro to Lingayen Gulf.

The fleet weighed on New Year's Day, 1945. The first two days of the journey were peaceful, but after that the *Kamikazes* arrived and gave the minesweeper and battleship groups an exciting journey, during which several ships were sunk or badly damaged. These attacks were countered by General Kenney's bombers attacking the airfields in southern Luzon, but as this did not have the desired effect, MacArthur

2 The Japanese Fleet, as far as was known, was distributed as follows:—Based on Japan and in Japan-Formosa area: 4 battleships, including *Yamato*, 5 carriers, 5 cruisers, 20 destroyers, ? submarines. In the Singapore Indo-China area: 2 battleships (half carriers) *Ise* and *Hyuga*, 12 destroyers.

asked for help from Halsey. Halsey's carriers joined in the battle, and with their assistance the flow of *Kamikazes* was sufficiently diminished to enable the transports to come through, if not untouched, only slightly damaged.

Halsey's carriers and Kenney's air force continued striking Luzon, playing havoc with enemy airfields and aircraft, and it soon became evident that Japanese air attacks were not as frequent or as heavy as they used to be. This decline in strength, except for one or two rallies, was progressive. On the other hand, *Kamikaze* attacks continued, the enemy being always able to produce them.

On 6th January, Oldendorf linked up with the minesweepers, and both groups entered Lingayen Gulf. The battleships, split into two sections, began the softening-up process by bombarding the beaches and continued to do so until reconnaissance aircraft reported that there was no enemy to be seen from 1,200 feet. The sweepers had to clear up three large minefields; they toiled all day and found nothing. Unknown to the Americans, the local guerillas had, for months past, been clearing the mines at night by an unorthodox but simple method. Two rowing boats attached together by a long cable, would go into the gulf and, as soon as a mine was caught, one of the guerillas would dive into the sea, cut the mine adrift and attach a rope to it; it would then be towed ashore, dismantled, and the contents used for blowing up a bridge or making a land mine.

If there were no mines and no enemy, there were still plenty of *Kamikazes*. They appeared the next morning and played havoc with the battleships and minesweepers. Oldendorf's flag was worn by the battleship *Mexico*, and among the passengers on board were Admiral Sir Bruce Fraser, the C.-in-C. of the British Pacific Fleet, which was due to arrive shortly, and General Lumsden of the Royal Marines who were there to have a look at their Allies' methods. A *Kamikaze*, crashed into the ship's navigation bridge, demolishing it and knocking out all communications, as well as killing the captain and 30 officers and men and wounding 87 more. Among the killed was General Lumsden. Admiral Fraser was knocked over and as he arose to a frantic inquiry of " Do you feel all right, Sir ?" staggered his questioners by replying " Yes, of course, except for a slight ringing in the ears !" As things went, it was better to have the *Kamikazes* attacking armoured ships than to have them on soft-sided transports, crammed with men and stores.

On 8th January, Vice-Admiral Barbey's convoy, closely followed by Vice-Admiral Wilkinson's, arrived in the gulf, and next day the force landed.

At this time, according to Intelligence reports, Yamashita's forces on the island consisted of 240,000 men, of whom 20,000 were naval detachments. His air force on the local landing grounds numbered some 400 planes, with strong reinforcements in Formosa. He was not so short of planes, but he was in need of pilots to fly them.

General Krueger's plan was to land two corps under cover of a naval bombardment; the line to be attacked running from Lingayen village to San Fabian, to the North-East of it. The two corps formed up as follows, reading from right to left :— Major-General Grisewold's XIV Corps (40th Division and 37th Division), Major-General Swift's I Corps (6th Division and 43rd Division). By nightfall on 9th January, nearly 70,000 troops were ashore, and a beach-head four miles deep and 15 miles in length had been established. Two days later, General MacArthur's headquarters were disembarked in the town of Dagupan, half-way between the two flanks of the Sixth Army. So far the enemy had offered very little resistance; it appeared as if Oldendorf's bombardment had cleared them all away. However,

when Swift's corps chose the beaches on the East side of the gulf for unloading stores, it proved too much for the enemy gunners in the hills overlooking them. They promptly opened a heavy and accurate fire which did considerable damage to the landing craft. The navy just as promptly replied, and the town of Rosario, slightly inland, which appeared to be the main source of the trouble, was heavily pounded.

Owing to *Kamikaze* attacks at night, the whole anchorage in the gulf was put under a smoke screen. The enemy, unable to attack from the air, resorted to torpedo attacks from small boats, midget submarines, and even by swimmers. Two destroyers, several landing craft, and a large transport were put out of action, the transport finally having to be beached. As the smoke screen thinned out towards dawn, the *Kamikazes* returned.

Intelligence reported that there were only two Japanese formations still situated in their defensive areas, the 23rd Division in the neighbourhood of Rosario, and the 58th Independant (mixed) Brigade some 25 miles North of Lingayen Gulf, the remainder were on the move. It also appeared that Yamashita had no intention of fighting in the central plain if it could be avoided; his plan was to defend the mountainous country around it. General Krueger decided to take the XIV Corps and to push straight on to Manila, 100 miles to the South, taking Clark Field, the largest airfield on the island, on the way. The I Corps would guard his base, his line of communications, and deal with the enemy around Rosario.

The XIV Corps met with no resistance worth mentioning until they reached and captured Clark Field; on the other hand the I Corps had hard fighting against the enemy in the mountains along the North of the central plain. While the 40th Division of Grisewold's corps held the Japanese concentrated in the Zambales mountains between Clark Field and the West coast of the island, the newly arrived IX Corps was landed in Subic Bay on the North end of Bataan Peninsula and, moving Eastward, cut off the peninsula and squeezed the enemy between themselves and the 40th Division. In Subic Bay, which the IX Corps had captured on landing, was an old American naval base which was rapidly put into use again.

The next step was to capture Manila, which was full of Japanese stores of all kinds. Yamashita, in one of his interviews after the war, said that if he could only have cleared his stores out of Manila in time, he would have declared it an open city. But as he was not given sufficient time to carry out his object, he fought tooth and nail. On 31st January, while the 37th Division and the 1st Cavalry (mechanized) Division were milling around North of Manila, the 11th Airborne Division was landed at Nasigbu, a small town on the coast to the South-West, and were racing up towards the city from the South.

Manila is divided into two by a sluggish tidal river, the Pusig. On the South bank is the main business quarter, and it was here that the Japanese had their strongest defences. Every house was loopholed, every wall fortified, and all the streets barricaded and mined. Field and anti-aircraft guns were everywhere, even in the higher floors of the houses. The North side of the river was attacked and finally fell to the 1st Cavalry (mechanized) and 37th Divisions. The enemy's rearguard put up a strong delaying action to cover the destruction of the river bridges behind them. When this had been accomplished, the survivors, disdaining to surrender, made a *banzai* charge and died to a man. The capture of the North side of the city released thousands of American prisoners of war, mainly civilian, who had been cooped up ever since they were captured in 1942.

General Grisewold (XIV Corps) decided to send the 1st Cavalry (mechanized) Division round to the East of the city to capture the waterworks, cut off the supply, and at the same time contact the airborne force which was now on the South-East side of the city. Simultaneously, the 37th Division was to cross the river and go straight ahead.

On 7th February, the 37th Division made an assault crossing, gained the South bank near the President's Palace, and, under cover of an artillery barrage, managed to gain a bridge-head one mile long and the same in depth that evening. For the next ten days they had to fight from house to house; in fact, when they reached one of the main hotels in the area, it took them three days to capture it, as the enemy fought stubbornly from floor to floor before being wiped out.

The enemy was now feeling the squeeze and took up a position in the old Spanish walled town Intra Muros, which was surrounded by a wall 15 ft. high, 18 ft. thick on top, and about 40 ft. thick at the base. The gates into it still bore the royal arms of Philip II of Spain. As there were a considerable number of non-combatants, including women and children, within the walls, General Grisewold sent a flag of truce with a message for the Japanese commander offering him honourable surrender within four hours, or he would come in. If he would not accept these terms, would he allow the women and children to be evacuated? To this there was no reply. The attack began. Heavy guns, using direct fire, breached the wall in two places. This was followed by a terrific bombardment from every gun that could be brought to bear; then came the assault through the breaches and, after a tough all-day fight, the last Japanese within the walls was eradicated.

This did not mean the end of the battle. Three large Government buildings, offices belonging to the Legislative, Finance, and Agricultural departments were manned by naval detachments under the command of Admiral Iwabuchi. He fought on for eight days and it was not until 4th March, exactly one month from the day that the attack on Manila started, that Iwabuchi and the last of his men were killed. Sixteen thousand dead Japanese, mostly naval, were found in the city, how many more were buried under the ruins of Intra Muros is not known.

Manila Harbour

The entrance to Manila Harbour was defended from seawards by four rock islands, Corregidor, Caballo, El Fraile, and Carabao. They had all been fortified from the time that they had first fallen into the hands of Spain, and when the Japanese took possession of them, they brought the armament and defences up to date. As MacArthur's intention was to use the harbour as a main base for his next bound, it was necessary to clear the harbour of mines and wrecks, and capture the islands before ships could anchor in it with safety. Of the four islands Corregidor was the largest and strongest. It was shaped rather like a tadpole and had an area of just under three square miles. On it were nine forts, whose armament consisted of guns of all kinds up to 12-inch calibre. The rock had been tunnelled into, to make barracks, magazines of all sorts, and a large hospital. It was, in fact, a miniature Gibraltar. In May, 1942, it was the last stronghold held by the United States in the Philippines when MacArthur was in command. It had withstood a terrific bombardment for three weeks when President Roosevelt, seeing that there was no hope of relieving the garrison, gave the commander a direct order to escape to Australia. MacArthur did so, leaving the garrison of over 10,000 men to fight on. They held out for another 10 days before they were forced by lack of water to surrender. The siege had lasted

28 days. The other three rocks were not as large nor as strongly fortified but, all the same, were formidable ones to crack.

On 15th February, the 38th Division, under cover of a naval barrage, landed at Mariveles, a town on the southern tip of Bataan Peninsula, the nearest land to the island of Corregidor. They encountered no resistance. For two days before this landing, the harbour had been swept for mines, while for three weeks Corregidor had been undergoing softening treatment, which included an almost continuous naval bombardment and constant bombing attacks from the air, the result being that the garrison had to spend their days under cover in their cave barracks. The American plan was to assault the rock from air and sea simultaneously.

From air photographs it was found that there were two areas on Corregidor where paratroops could drop, the parade ground, which was 250 by 150 yards, and the golf course, 325 by 150 yards in extent. What made things more difficult for the paratroops was that one side of the area ran along the edge of a 500 ft. cliff which dropped sheer into the sea, while the ground was covered with craters, bombed houses, and splintered trees. The Japanese commander had been warned to look out for a possible airborne attack but, after making a reconnaissance of the area, decided that such an attack was not feasible.

On 16th February, at 7 a.m., the air force commenced to bomb while the battleships bombarded for an hour and a half. Then, at 8.30 a.m., troop carriers flew over and dropped two battalions of the 503rd Parachute Regiment on the top of the rock. Fortunately, at the critical moment, a strong wind arose and cleared away the dust and smoke of the bombardment. The drop took place at 600 feet and, as had been expected, several men fell into the sea where rescue launches had already been posted to haul them out. Some 20 were rescued alive. Four hours later another battalion drop took place. Meanwhile, at 10.30 a.m., the 3rd Battalion of the 34th Infantry Division came over from Mariveles in assault craft and, in spite of land mines and a very heavy enemy fire, took Malinta Hill, the neck of the tadpole shape. The Paratroops held the top of the island and the Infantry had cut it in two, but it was several days before the two forces could join hands; in consequence the Paratroops had to rely on airdropping for their supplies.

The Paratroop casualties in this operation were not heavy. Out of 2,000 men dropped, they lost 12 killed and 270 were wounded or injured. The enemy, who by now were used to bombardments not followed by assaults were taken by surprise, but the Americans also got a surprise. They expected to be opposed by about 1,000 men, instead they found that the force on the island was 6,000 men. Half of these were posted on the perimeter, and the remainder were bottled up in the Malinta tunnel on the head of the island. After the first few days the fighting, which until then had been tough, resolved itself into death struggles by isolated groups of the enemy inside the galleries and caves dug in the rock. On 27th February, the garrison of Malinta cave, knowing that they were trapped and scorning surrender, blew the cave and themselves up—an example of mass *hara-kiri* which was followed in another place later on. Bit by bit the enemy were destroyed, but not all of them. In 1946, after leaflets had been left informing survivors that the war had finished months ago, a group of 20 Japanese approached an American sergeant of the Graves Commission and announced that they wished to surrender.

Caballo came next. It was held by a force of 400 men and they put up a stout fight against their attackers, losing 50 men. The survivors retired to the centre of

the rock where they took refuge in two reinforced concrete mortar emplacements, from which there did not appear to be any way of evicting them. The Americans, however, were not to be outdone. They collected naval pontoons, brought them as close as they could to the pits, filled them with Diesel oil and petrol, the most inflammable of mixtures, and then pumped the mixture through hoses into the refuge. Then, when everyone outside was safely clear, a phosphorus bomb was flung in. A series of terrific explosions, which continued for a couple of days was the result. There were no live Japanese left.

The other two islands were taken a month later. El Fraile was given the same treatment as Caballo. General Kenney, who was watching operations from his plane flying 2,500 feet above, reported that when the fort erupted, a heavy steel gun emplacement going upwards passed his machine. Next day a landing was made on Carabao, the last of the forts. The garrison, who had been spectators of the fall of the other forts, had learned their lesson; they had evacuated the night before.

The next work that had to be done was to clear the anchorage of mines and wrecks. One hundred and ninety five ships were raised, and countless mines were swept up, until, on 1st May, the harbour was passed as safe and fit for use. MacArthur had the base he wanted.

In Luzon, MacArthur's forces held the ground to the West of a line drawn along the East side of Lingayen Gulf, from the town of San Fernando through Rosario, South along the East side of the central plain, through Santa Cruz, South-East of Manila, down to the sea at Batangas.

General Yamashita had lost the battle of Manila, and if he could have avoided it there would not have been one. His plan did not envisage fighting in the central plain, where he knew that his opponent was much stronger in armour than he was. He wanted to fight in the mountains, where armoured vehicles would be handicapped, and as he had still a very formidable force under his command he proceeded to put his plan into effect.

General Kruegers I Corps, commanded by General Swift, was very busy pushing the 23rd Division (Japanese) Group through Balete Pass. This pass is due East of San Fernando and due North of Manila; it is the northern end of the central plain. For weeks on end the I Corps had attacked, been counter-attacked and pushed back, and then attacked again the very strong defensive position near Balete Pass over which the main road from Manila went North to Aparri. The enemy, fighting desperately, had to be driven from mountain ridge to mountain ridge and, as often happened after an enemy counter-attack, the whole job had to be done all over again.

A strong force of the enemy was in occupation of the Bikol Peninsula, the long, wriggly, narrow strip of Luzon which stretches down to the island of Samar. In order to deal with it, a reinforced combat team, which in Britain would be called a brigade group, was landed at Legaspi, at the southern end of Luzon, and with the help of the local guerillas drove the enemy steadily North-West into the arms of a second combat team which had been sent out to meet them from the central plain. It was hard, slogging work with plenty of fighting, and it took weeks to accomplish.

On 13th May, the Americans scored twice over their opponents. The 1st Cavalry Division, moving East from Manila, reached the coast at Binangonan Point, and by doing so cut off a large pocket of the enemy who were very strongly posted in the Marikina watershed. Even more important was the taking of Balete Pass by the

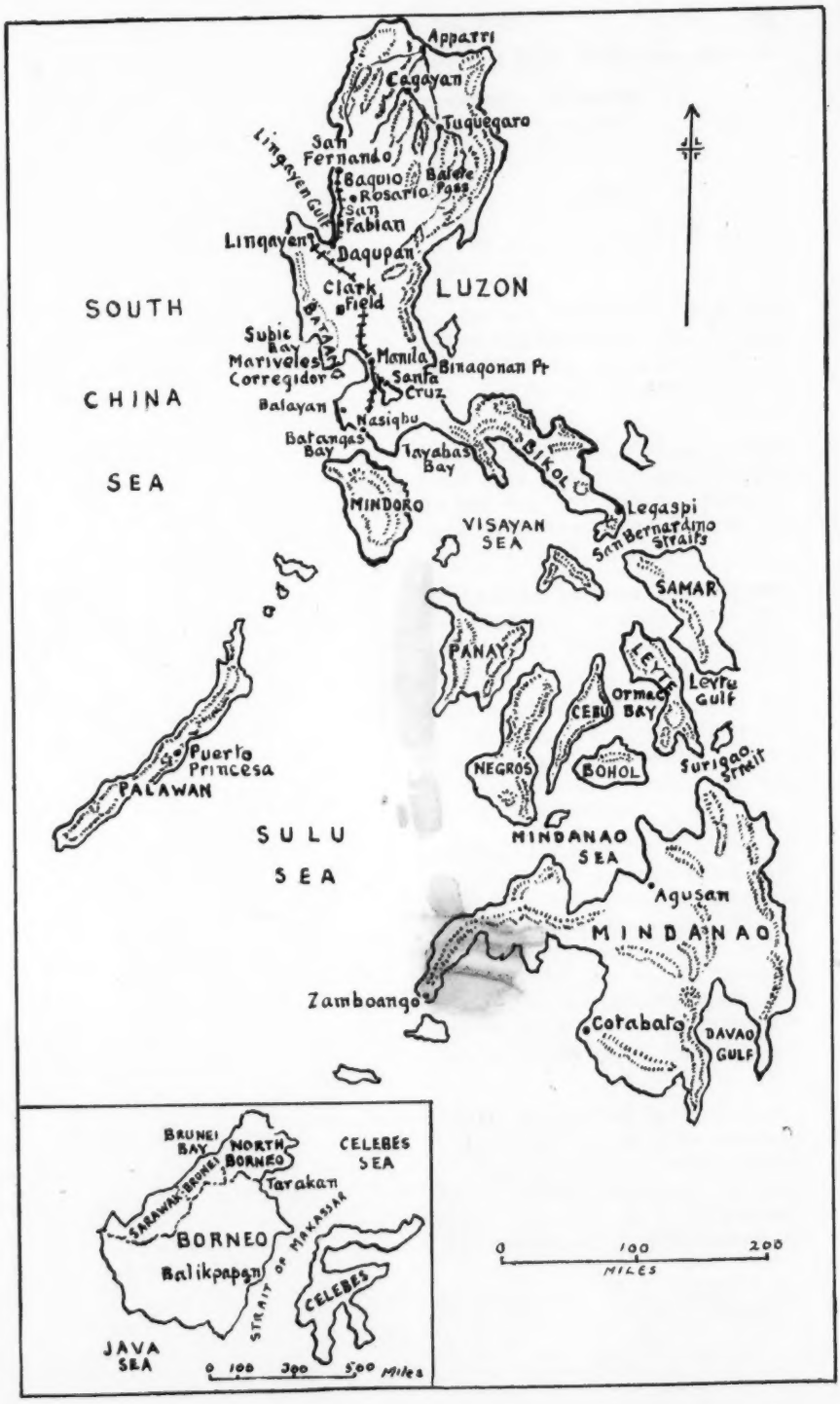
37th Division of the XIV Corps on the same day. Driving straight on northwards along the Cagayan Valley against an ever stiffening resistance, the division was brought to a halt in front of a strong enemy defensive line in the rugged mountain country. North of this position were the Filipino guerillas, doing their best to stab the enemy in the back. On 21st June, the town and harbour of Aparri was captured by a force of U.S. Rangers, and two days later the 11th Airborne Division (less several units) was dropped on the Tuguegaro road, running through Cagayan valley, just South of Aparri, and about 25 miles North of the 37th Division, with whom they rapidly made contact. Cagayan Valley soon fell, and with its capture large scale organized resistance came to an end. The enemy now broke up into small groups and went deeper still into the mountains, which often reach over 8,000 feet in height. Although these groups were not able to delay the course of the campaign, they were of considerable nuisance value, and it took months of time and needed several thousands of troops to eradicate them. General Yamashita finally surrendered to General MacArthur in Manila after the cease fire day.

While the Sixth Army was clearing up the remnants of the Japanese Army in Luzon, two other operations, known as " Victor " and " Oboe " were being planned and put in motion. " Victor " was for the liberation of the whole of the Philippines ; " Oboe " was for the reoccupation of the Indonesian Islands, of which New Guinea was the only one in Allied occupation.

Operation " Victor " was given to the eighth Army under General Eichelberger, who was to be assisted by Admiral Kincaid's Fleet, for protection, transport, and supply. The first objective was the island of Palawan, which stretches as a sea wall between Mindoro and Borneo, and along whose West side runs a narrow, deep, sea passage, separated from the main China Sea by a vast, uncharted area of rocks and reefs. An air force, based on Palawan, would be able to cover this passage as well as the two entrances at each end of the island which lead into the Sulu Sea. On 28th February, a force was landed at the main town of Puerto Princesa, and at a cost of 60 men killed and wounded, it dealt successfully with the garrison of about 1,000 men. It was here that the ashes of 150 American prisoners-of-war, who had been incinerated by their captors in a cave, were discovered.

The capture of the Visayan Islands, Panay, Cebu, and Negros followed. No great resistance was encountered on any of these, but it took a long time to clear the odd parties of fanatically patriotic non-surrendering Japanese out of the holes and corners in the jungle. Mindanao, the second largest island in the Philippine group, was the last on the list of operation " Victor." Its area is 37,000 square miles, very nearly as large as Luzon. Before the war there were more Japanese on this island than there were in the rest of the group. The Japanese had settled here and had bought up the rope industry. Manila rope is the best rope to be had, and the hemp is grown on Mindanao. The Japanese garrison was 50,000 strong, spread over the island. What helped the American force was that the guerillas in Mindanao had control of most of the country. The enemy held the towns and the roads, but they left the rest to the guerillas.

On 10th March, American forces from the Eighth Army took Zamboango, meeting very little resistance. A month later a force was landed and captured Catabato on the West coast, then moved east to Davao where, after some very tough house-to-house fighting, they finally captured the town. The force next moved North to join hands with another moving South from Agusan, and there was not much left to do except to tell the guerillas to clean up the remnants.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Rosario
San Fabian
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CHINA
SEA
BATAAN
Subic Bay
Mariveles
Corregidor
Manila
Santa Cruz
Binaqonan Pt
Balayan
Nasiqbu
Batangas Bay
Tayabas Bay
BIKOL
MINDORO
Legaspi
San Bernardino Straits
VISAYAN SEA
SAMAR
PANAY
LEYTE
Leyte Gulf
Ormoc Bay
CEBU
NEGROS
BOHOL
Surigao Strait
Puerto Princesa
PALAWAN
SULU SEA
MINDANAO SEA
Agusan
MINDANAO
Zamboanga
Cotabato
DAVAO GULF
BRUNEI BAY
NORTH BORNEO
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BORNEO
Balikpapan
STRAIT OF MAKASSAR
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JAVA SEA
0 100 300 500 Miles
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MILES

Casualties on both sides incurred in the liberation of the Philippines were :—

	Killed, wounded, missing,	*Prisoners-of-war*
Americans	60,628	—
Japanese	317,000	7,236

Operation " Oboe "

From the strategic point of view, Borneo was very important to both sides owing to the immense quantity of oil and rubber to be found there. The Japanese obtained all their oil for their Fleet, Air Force, and for the Army, from Borneo, although most of their rubber came from Malaya. The sooner this supply could be stopped, the better for the Allies.

The main portion of the force sent to carry out this operation, which was commanded by Lieut.-General Sir Leslie Morshead, was the I Australian Corps, including the 9th Australian Division, Desert Rats who had defended Tobruk. The fleet, mainly American, under command of Vice-Admiral Barbey, included Australian naval units as well as Dutch.

The plan included three main landings in the following order: first Tarakan, an island rich with oil which lies off the East side of Borneo ; secondly Brunei Bay, at the northern end of Sarawak, where the enemy had a naval base ; and finally Balikpapan, on the East coast on the Makassar Strait.

The 26th Australian Brigade landed on Tarakan on 1st May, and in four days the airstrip and the oilfield were in their hands. Six weeks later the force moved to Brunei Bay. It was strongly defended by coastal defences and minefields. After a naval bombardment, two brigades were put on shore at various points which extended to a distance of ten miles each side. There was not much resistance.

The capture of Balikpapan was more interesting. The town lies up a river and the approaches to it are very shallow. On this occasion they were also very heavily mined. The Allied minesweepers had worked on it for a fortnight under heavy fire, but they had not been able to clear them. In spite of this, it was arranged that an assault would take palce. The naval bombardment, owing to ships being unable to approach any closer due to shoals, was carried out at a range of 12,000 yards. When the troops landed there was no resistance, but five landing craft were sunk by mines and a dozen more damaged. The ammunition expenditure for the covering fire (1,000 8-inch, 12,000 6-inch, 19,000 5-inch, and 60 4.7 inch shells) was out of all proportion to previous operations.

While MacArthur was clearing up the Philippines and the East Indies, the higher command of the United States was preparing to close with Japan on her own land. In order to do this, it was necessary to have landing grounds from which bomber aircraft would be able to strike Japan and return, without refuelling. The most suitable landing grounds were on the small island of Iwo Jima, in the Volcano Islands, 750 miles from Tokyo. The operation, which ended in the capture of this island, will be described in the next article.

AIR TRANSPORT IN WAR

By Group Captain G. W. Williamson, O.B.E., M.C.

THE closing stages of war in the Pacific and the whole of the war in Korea have together produced developments of air transport which will have a considerable influence, at least on tactics if not on strategy, in any future war.

Much of this development was due to the work of the U.S. Military Air Transport Service, and two years ago Major-General Laurence S. Kuter, in a lecture to the Society of Aeronautical Engineers in New York, looked back to the immense air effort made by his Command during the 1939-45 War. He referred to the transport each month of over 60,000 men across the Atlantic, from war in Europe to war in the Pacific. Entire Chinese armies were moved, equipped, and fed by air, and the occupation of the Japanese home islands was carried out by his aircraft. He added a generous tribute to the co-operation of British aircraft in what was almost a strategical application of air transport, the Berlin air-lift. At the end of the war his Command controlled over 3,000 large aircraft. The present strength of the nucleus of the U.S. Air Transport Command might be but 10 per cent of this, but, by 1955, he hopes to have at least 1,000 aircraft of more advanced transport types, including those built for, and operated by, the airlines. These would be so designed and made that they could be converted at very short notice to military uses.

Even now, air transport in the Pacific operates a variety of aircraft, of types which could be applied either to tactical support or grand strategy, involving world-wide movement of tens of thousands of troops. There is little or no overlapping between the three main types, which have been developed so as to be specially suited to entirely differing functions :—

(*i*) Large, long-range, multi-engined aircraft, of which the largest would carry 400 troops, or a total freight of 50 tons.

(*ii*) Large or medium sized aircraft, some of which have been developed from gliders, able on account of their light wing loading to use forward aerodromes.

(*iii*) Helicopters of various sizes, from the three-seater up to about a 40-seater at present.

Perhaps the most striking feature of the war in Korea has been the successful evacuation of wounded. Of every 100 casualties reaching a battalion first aid post, only two die of their wounds. In the war in Europe the figure was 100 per cent greater.

No hospital ships sail like shuttles back and forth across the Pacific between Korea and the United States. In the U.S.A. itself there are no hospital trains, no wounded are condemned to be carried uncomfortably by motor ambulance or bullock-cart to a place of safety. Instead, a helicopter can transport a wounded man to a base hospital in less than an hour, and with but a single trans-shipment he could be in hospital in his home-town less than 24 hours after leaving the firing line. It must be admitted that there are hospital ships in Korean waters, but they are static, anchored, and used as general hospitals, connected to the mainland by helicopters which alight on a huge red cross painted on each afterdeck.

Just as casualties are evacuated straight from Korea to cities in the U.S.A. by air-transport, casualties in any future war in Europe would be fortunate enough to find themselves home in 24 hours after leaving the line, in spite of the great distances involved. It seems likely that flying ambulances would hop from an overseas base

to an aerodrome in southern England, and then follow the route of the airlines. The aircraft for this service already exist, and almost every builder of transport aeroplanes specifies the number of walking-wounded or stretcher cases which the aircraft can carry. But even when the number is not so specified, it is known that in the U.S.A., aircraft intended for civil use are unobtrusively provided with the brackets or other means of attachment necessary for stretchers, or for the small folding seats used by walking-wounded.

Although in an emergency the R.A.F. could use as ambulances great aircraft such as the Bristol Brabazon or the Saunders-Roe Princess, we have nothing of this type actually in service. American and French types of large ambulance include the Breguet Provence, the Boeing Stratocruiser, the Consolidated Vultee XC. 99, the Douglas Globemaster, and the Lockheed Constitution. The Boeing will carry 83 stretcher patients, the Consolidated (or Convair) monster, with a span as great as our Brabazon, has room for 300 stretchers and a suitable proportion of medical personnel and nursing attendants, and the Douglas Globemaster accommodates 136 stretchers together with a total of not more than 52 medical personnel and sitting casualties.

The Breguet, capable of carrying a load of vehicles of about 16 tons, corresponds closely in gross weight and cubic capacity to the Boeing, and could doubtless be converted for use as an ambulance if required. Like the Boeing, it has two decks, and the proposal has been made that the smaller deck might be equipped as an operating theatre. In these and similar aircraft, likely to fly at great altitudes so as to develop their full speed, the hulls are pressurized, and at least one of them is fitted with oxygen points for every bed, together with electric blankets to provide the extra warmth required by patients who may be suffering from shock, either as the result of wounds or operation.

Turning to the second type of transport aircraft, we possess in this Country the world's finest example of an aircraft derived from a large glider. The Blackburn and General Universal Transport has a span of 162 ft., and will carry about 14 tons of military equipment for short distances, such as 250 miles, or seven tons over a distance of 1,750 miles. It could be equipped as an ambulance, and as a commercial passenger transport provides accommodation for 54 passengers on the lower deck, and 18 in an upper compartment in the rear part of the fuselage. But its greatest advantage lies not in its huge, cathedral-like fuselage, or in its 14 tons maximum load, but in its light wing loading. In military trials, it has proved its ability to load and unload a considerable cargo quickly, combined with flying into and out of small aerodromes such as those which might be found fairly close to a front line. Like other lightly loaded transport aircraft, it can still be flown as a glider of the type from which it was derived.

Comparable American transports for medium distance are those made by Chase and Fairchild. The Chase Avitruc will carry 24 stretchers and 2 medical attendants. The rear wall lowers as a ramp and the large fuselage will carry a 1½-ton truck, or a 75-mm. gun and one jeep. The Avitruc is equipped with side doors from which paratroops can be dropped in " sticks. " The Fairchild Packet is similarly equipped for troop transport, flying ambulance, or medium cargo carrier. It is specially adapted to the discharge of pre-packed paracans through a hatch in the bottom of the fuselage, to which the cans are rapidly moved by means of an overhead electrically operated monorail. Ramps are provided for the loading of wheeled or tracked equipment, and the rear cargo doors open, on a vertical hinge line, as wide and as high as the cargo hold. Like the Chase Avitruc, there are dual doors for the simultaneous jumping of two " sticks " of paratroopers.

Fairchild has been responsible for the development of a military transport aircraft which, for speed of loading and unloading, is likely to remain for long the most efficient load carrier in existence. The Fairchild idea consists in having the lower part of the fuselage detachable from the upper. When the aircraft lands, the lower fuselage, on wheels of its own, can be released and wheeled away. The operation of releasing and removing this under-fuselage, and replacing it by another pre-packed with a return load, takes less than 10 minutes. The standard Fairchild Packet can be loaded and unloaded in half an hour, and the big Douglas in 90 minutes. A far-sighted editor of the Aero Digest, published in New York, suggested that empty panniers, pods, or capsules (as the under-fuselage has been variously described) could be fully equipped as dressing stations close to the front line, picked up by helicopters, and without trans-shipment of their wounded could be attached to a pack-plane at a base aerodrome, thus involving the least possible disturbance of casualties and permitting continued attention by the same medical personnel.

This would sound rather like a pipe-dream if it were not that at least one helicopter exists which could carry out such a task. This is the Piasecki 40-seater, built to take a similar capsule or pod. The aircraft itself stands on tall landing legs with the pod slung between them, and carries an under-fuselage which looks like a 30-seater motor bus. No details of its weight-lifting capabilities have been released, but a much larger helicopter is being developed by Mr. Howard Hughes, and it is believed that this will lift as much as 10 tons. Mr. Hughes may be described as an expert weight-lifter himself. He designed and built the largest aircraft in the world, a flying boat capable of carrying 700 persons and weighing nearly 200 tons gross.

From the above description, it would almost appear that these three types of military transport were specially built for the evacuation of casualties, but in fact they are equally efficient in a wide variety of other roles. Beginning with our own Handley-Page Hastings, it will accommodate as an ambulance 32 stretchers, 29 sitting cases, four attendants, and a ton of medical supplies. Alternatively, it will carry 30 paratroops and 20 supply containers or paracans, or 50 fully equipped airborne troops. As a freighter, it can carry bulldozers, 25-pdr. anti-tank guns, or 3-ton tanks. As a supply dropper, it will take a jeep or anti-tank gun on a carrier fitted beneath the fuselage, or can drop a load consisting of forty 400-lb. containers. It is also equipped for use as a glider tug.

The Bristol Freighter will similarly carry trucks, guns, and stretchers; it is equipped for the dropping of paratroops and paracans, and a roller conveyor can be fixed to the floor for rapid movement of cases to the dropping hatch. The Vickers Valetta has a track for containers; while the enormous Convair has two electrically operated cargo hatches and four cargo hoists on overhead rollers. This great aircraft is equipped with ramps for vehicles at both ends. Where vehicles are to be loaded, the doors at either or both ends of large aircraft are of the clamshell type, opening to the same width and height as the huge hold.

It must not be thought that these heavy loads are carried at the expense of petrol. Convair state that they have in hand a new design which can deliver a load of 50 tons of tanks, guns, and troops from bases in the Eastern United States non-stop to bases in England or Western Europe. Similarly, the Douglas Globemaster, which has visited this country more than once, will also carry tanks, field-guns, bulldozers, and fully loaded trucks. It will carry about 25 tons of payload 850 miles, unload, and return without refuelling. It is a good example of the new technique of using main components of a previous well-proved type, so that the new prototype gets

into production at least a year earlier than in the past. The new aircraft will use wings, empennage, and engines of a previous transport, the Douglas C. 74.

The medium or tactical types of military transports have been employed in Korea on strange duties for which they have proved eminently suitable, and to which they will undoubtedly be applied in any future war. When the specification of the Fairchild pack-plane was prepared, the Military Transport Service included a clause to say that the pannier or pod should be suitable for the conveyance of telephone poles, or 9-ton sections of bridges, even if this necessitates the doors of the under-fuselage being removed. The other Fairchild aircraft, their C. 119 Packet, helped to instal a 600-ton bridge in Korea, each plane carrying three 2,500-lb. sections per trip. Delivery of the complete bridge was accomplished in 70 sorties. The C. 119s carried a number of other strange loads, such as large fork lifts, a complete asphalt paving unit, bulky 19,000-lb. wire rolls, a completely equipped fire crash truck, large transmitters, and some three-ton generators.

But the usefulness of a helicopter is not confined merely to transporting such items as the sections of a bridge. The larger helicopters being built in the U.S.A. to-day are equipped for use as flying cranes, so that a girder or bridge section could be carried below the fuselage and lowered into position by the helicopter, thus saving the labour of hundreds of mechanics.

The coming of these large helicopters, in spite of their high cost, may obviate landings on defended beaches, and they have already been applied to the seizure of points which were tactically of great importance.

In one operation it was necessary for troops to occupy a hill nearly 3,000 feet high and ten miles away across almost impassable country. It was thickly wooded, with no space for landings. About 15 pioneers were lowered by ropes into this close country and in an hour had cleared two spaces for helicopter landings. In three hours 224 men had occupied the hill, and had been provided with nine tons of equipment and supplies, thus outflanking the enemy line.

Helicopters proved to be an adequate reply to guerilla warfare behind the lines, resulting from the infiltration of North Koreans disguised as peasants. Sikorsky S-55 ten-seaters were used in pairs, filled with heavily-armed marines. One helicopter would land, protected from above by the other, all suspicious housing was destroyed and all civilians sighted were picked up and brought in. Though it took a few weeks to sterilize the front line of one division, " Operation Rabbit-hunt " proved to be a conspicuous success.

Large helicopters have been used in the U.S.A., at least during military exercises, as " assault transports." They can land troops far into enemy territory without the high casualties inevitable in landing on defended beaches. In one such full-scale exercise, helicopters were launched from aircraft carriers still under way, and covered a distance of 40 miles in the time that water-borne invasion would have traversed only two miles. Gun crews can be lowered by ladder or sling and can then direct the helicopter pilot to the most suitable site for the gun. Even the gun can be delivered by slings and hoisting blocks without the helicopter wheels touching the ground.

Both in this Country and in the U.S.A., very much larger helicopters are projected. Westland have a project design for a 100-seater, which would carry as an alternative three guns, three jeeps, and 15 men. A paper read before the Helicopter Association of Great Britain referred to the practicability of a 400-seater, with alternative loads of a 45-ton tank, or six 25-pdr. guns, with 600 rounds of ammunition and gun crews.

RIFLE SHOOTING — A PARADE OR A SPORT?

By Lieut.-Colonel B. S. Jerome

IN his article, "Shooting in the Army," in the November, 1951, issue of this Journal, Lieut.-Colonel Tregear emphasized the importance of rifle shooting and made many suggestions for improving it. In the British Army Journal of January, 1952, Lieut.-General Sir Richard Gale explained the advantages of the .280 rifle over the .303 Lee Enfield, including the greater ease of training. It is therefore to be hoped that the British Army is now on its way towards possessing a weapon that will minimize the amount of routine mechanical training necessary, and so allow more time for improving the actual shooting skill of the man behind the weapon. If so, perhaps the time is ripe to re-examine the outlook of the Army towards the standard of classification shooting hitherto required, and any other methods that might be employed to raise the general standard of shooting.

Lieut.-Colonel Tregear rightly demanded the motto, "one round, one body." The importance of such a standard is likely to be greater in any future war than ever before. Those who have fought in Korea have emphasized the Chinese tactics of mass attacks. Any future successful defence against unlimited manpower is likely to be equally dependent on obtaining the maximum effect from every single round of ammunition fired.

If this be agreed, and if Lieut.-General Sir Richard Gale's statement that the function of the rifle is to kill at ranges below five hundred yards is also to be put into effect, it is clear that the present standard of classification shooting is quite inadequate. Assuming the average width of a man to be about eighteen inches, a firer who can group at slow rate of fire to four inches at one hundred yards can only be sure of hitting his target at four hundred yards under the best possible range conditions. Given some or all of active service conditions, however, such as unknown range and wind, poor visibility, a moving target, himself being shot at, a hot barrel, and being compelled to fire rapid, it is probably no exaggeration to say that he is more likely in practice to miss than hit at two hundred yards. Yet this is the highest standard of classification grouping required. The man who is still allowed to classify with a twelve inch group cannot be sure of hitting his target at two hundred yards under the best possible range conditions, and it is doubtful whether he would hit his target at even fifty yards on service. By no stretch of imagination can this be interpreted as "one round, one body."

It seems possible that the generally low standard of army shooting may be due to the mental approach to it. The attitude that every soldier must reach a certain standard requires the setting of a minimum standard that can be reached by the poorer shots. It also necessitates treating shooting as a grim duty instead of an interesting sport. If the same treatment were accorded to football, with men being drilled at it on the barrack square and standing in fear of losing pay if they failed to reach a certain standard, would they continue to rush for a football at every leisure moment and practise with enthusiasm till they were tired out? It is almost certain that they would not, for the main enjoyment of leisure lies in having a change from the occupations that are compulsory when at work. Therefore the well-intentioned insistence on every man's reaching a certain standard and the drill methods of instruction to achieve it may be defeating the object.

The writer's personal experience leads him to believe that this is in fact the case. For several years as a subaltern he suffered the usual drill methods of regimental instruction, a small arms course at Pachmari, and much "poking drill," and by their aid scored at one annual classification, if his memory serves him right, five less than possible. He then aspired to try his luck at Bisley and, by the great kindness of the members of a distinguished shooting regiment which was stationed nearby, trained for it with them. He at once discovered, however, that competition and classification shooting were in totally different classes, the former being a true art that required a very different mental approach. The smaller bull, absence of cover, shooting in all weather conditions and, above all, success being measured not by a set standard but by comparison with the results of the best riflemen alone, required the adjustment of shots not to the nearest foot but almost to the nearest inch. Even to attempt to do this required far greater knowledge and interest than classification shooting ever demanded. In fact, many of the methods of the *Small Arms Training* of those days had actually to be unlearned. Thanks to Barlow's admirable book, *The Elements of Rifle Shooting*, and unstinted guidance and help, including advice from a well known King's Medallist, he managed to regain his entrance fees and a bit more at his first attempt at Bisley and scored, again if his memory is correct, 47 out of 50 at one snapshooting practice. In the aggregate this was far from good shooting, but at least it showed that considerable progress could be made in a very few weeks by—and this is all important—anyone whose interest had been thoroughly roused.

A sequel to this episode is of greater importance. He was ordered to train a Young Soldiers' Team of his own regiment for the Command Shooting Meeting, in the short time of three weeks, for competition shooting practices. The choice lay between selecting marksmen and first class classification shots, and practising them by *Small Arms Training* methods, or second class shots, who would be less convinced that they had nothing to learn, and training them from scratch in competition shooting methods. As an experiment, and in the full knowledge that the time was too short to train for rapid and snapshooting, he chose the latter. The result exceeded all expectations. If memory after some eighteen years is correct, the team came third out of a considerable number of competitors in the slow practices though, as expected, they were near the bottom in all others. But there is little doubt that, given a further few weeks of training, they would have become a really useful all round competition shooting team.

The methods of training of the fine shooting regiment mentioned above are worth recording, for they differed so widely from general army practice of then and to-day. All thoughts were directed towards competition shooting, on the grounds that if a man could hit the smaller competition bull he clearly had no need to worry about not hitting the classification bull. All training was based on instilling and maintaining interest in, and enthusiasm for, shooting as a sport, not as a duty. Squads of fully trained soldiers with their paraphernalia of aiming rests, sandbags, and aiming discs being given the same training year after year were unknown. In their place pairs of friends could normally be seen in odd corners of barrack rooms and parade grounds practising in their own time at marks on paper hardly visible at five yards, and cheerfully comparing notes as they did it. On brigade training it was difficult to pass them at ten minutes' halts without seeing several men in each platoon arguing with enthusiasm over their individual ways of releasing the trigger, aiming, or the thousand and one other details of shooting. There was usually some

competition going on, in or outside parade hours, to which all who could come were welcome; some money was usually to be won, and the men not infrequently bought their own ammunition. On the range, details were never lined up in rows, waiting their turn to fire, sloping and ordering arms as each detail changed. Men enjoyed themselves instead, reading books if they wished, until it was their turn to fire next. Any orders that had to be given were cut to a minimum and the parade ground voice on the range was abhorred. As a result officers and men looked on the range as on a football or cricket ground, and on shooting as an exceedingly pleasant recreation. Abroad, where local leave was frequently outside the pockets of soldiers, shooting leave camps in some shady grove near the range were not unknown, with a battalion officer in charge. The men shot at certain times if they liked, and visited the garrison cinema and dances as and when they pleased. Guards for rifles and ammunition were found from those who fancied beer, song, and a camp fire more than beauties of screen and cantonment, or by drawing lots if necessary.

But, it will be argued, such treatment does not cater for the bad shots who exist in every unit, some of whom will never be better than bad second class shots. No, it does not, and that regiment took, it is thought, a very sensible view about them. They just refused to worry, and wherever possible gave them jobs armed with the revolver instead. They were of the opinion that if no efforts can make a man enthusiastic about a subject, he will never be good at it whatever methods are tried, and in any case there is little difference in practice between a mediocre and a bad shot. If a man loses his pay he, and no one else, is the sufferer, and the remedy is in his own hands. The shooting reputation of a regiment that steadily wins army competitions is unaffected by a few bad shots in their tail, provided that they remain only a few. If they become more numerous, something is wrong with the methods of instilling interest and enthusiasm. In no case can a situation warrant making shooting a burden for all in order to effect a slight improvement in a minority. But—and all the experienced shots were unanimous on this point—it took about seven years to make a really good shooting regiment, though once made there was little difficulty in maintaining the standard.

The easier manipulation of the .280 rifle should enable this period to be reduced considerably, not least because it will cut out much of the boredom inherent in practising bolt manipulation and aiming, and so prevent the less persevering from losing interest at the beginning of their acquaintance with the rifle. A new bugbear has arisen, however, in the Infantry Group System. Now, instead of requiring the agreement of only two battalions, all wearing the same cap badge, all with the same tradition and with most individuals serving alternately in the two battalions, to the same approach towards shooting, it requires the agreement of a hotchpotch of several. It would clearly be useless for a man who had been trained largely by fear (a nasty word but, if the truth be faced, it has amounted to little else) of being a bad shot to be transferred to a unit where shooting was regarded as a sport. He would rarely be able to change his outlook.

The disbelievers—and there will be many—in teaching shooting as a sport instead of a parade subject will query the advantage of the former method. It is suggested that a man's aspirations and ability rise or fall according to the aim that he sets himself. In all games the maxim is preached of playing whenever possible with those better than oneself. The object of this is not merely to copy mechanically the actions of better players, but to become accustomed to a higher standard of play, without achieving which the player feels dissatisfied with himself. His aim is

therefore continually rising. To tell a bowler that as long as he continued to take two wickets in every match he would keep his place in the side would be little encouragement for his taking more wickets when winning the match depended on it. It would be even less encouragement for any other bowler who habitually started to take more wickets. Yet that is exactly what is done by classification standards in shooting. " Score so many points and you have done all that is asked of you. Score any above marksman's level, it will help no one," is virtually what the classification course says to a man. The result is that very few men ever do have the ambition to score more. Yet competition shooting says, " Nothing but the best is ever good enough." What a vast difference in outlook! That is why competition records are continually being beaten and the general standard of competition shooting, as of all other sports, continually rises. It is why the general standard of classification shooting never rises, and spends so much of its time declining.

Henry VIII was faced with an almost exactly similar problem of universally bad shooting. He solved it by substituting archery for other sports, and arranging for it also to be run as a sport. The result was a renaissance of English shooting prowess. It is true that England was then mainly agricultural and that the danger area of arrows was small. But he was catering for a whole nation, from any members of which his next Army might have to be drawn. The Army of to-day has its ranges alongside almost every garrison, and is mainly catering for its own members. The writer would be the first to acknowledge the physical and mental benefits of cricket, football, athletics, and cross-country running. May they not, however, have become rather a fetish in the Army, as indeed in the nation, and be carried to excess? Henry VIII was in favour of sport, but only of those sports that were of value to the Country. One would have thought that the British Army, responsible above all others for teaching straight shooting for war, would have held the same view even more forcibly. But unfortunately it does not. Regiments have been for many years, and continue to be, encouraged to establish a greater reputation at other sports than shooting. Crowds of soldiers line the touchlines of football and the boundaries of cricket grounds while the ranges remain deserted, and the Rudyard Kiplings of this world remonstrate in vain against " the flannelled fools at the wicket or the muddied oafs at the goals."

An aspect mentioned by Lieut.-Colonel Tregear deserves all the emphasis that it can be given—" The tendency is for the soldier to become a jack of all trades, with no spotlight on any fundamental basis. If such a spotlight is directed on any particular duty, it is usually on the specialist and technical branches which, however, come to nothing if the rifleman is not up to his task." No truer word has ever been written. The Army is in process of inculcating into all its members the outlook of garage mechanics whose main interest lies in making machines work, not in the results that they subsequently achieve. Having a childlike faith in the engine of a racing car, they are blind to the even greater necessity of the driver's skill. This is shown by the spate of articles in military journals on armour, few of which appear even to recognize that unless the crews shoot straight at the end, both they and their vehicles are useless. They are even harmful, for their presence has caused a false reliance on a strength that does not exist. The same outlook has been noticeable in much of the correspondence on the adoption of the .280 rifle. It has apparently struck very few people so far that unless men shoot straight with it, it will be no improvement on the old.

Let us drop, once and for all, the highfalutin and sloppy preaching that makes all right-minded Britons blush uncomfortably, such as " treating one's rifle like one's

wife " and " the soldier's pride in his weapons," and treat shooting in the way that the British most enjoy any occupation—as a sport. As such, the standards attained at Bisley and similar meetings can be made more general, and the motto, " one round, one body," have some real chance of being put into effect. Let us plant a few trees alongside our ranges to relieve them of their bleak appearance of well fought over battlefields, which only those blind to any art, including that of shooting, would willingly frequent. Let us invite civilians, including ladies, on to them, so that shooting may be made popular throughout the nation, recruits attracted to the Army by it, and those entering the Army in war be already versed in the art. Let us buy our ammunition as we buy our cricket bats, footballs, and beer. Above all, let us abandon the outlook that to make good riflemen it is necessary to make shooting a solemn and grim duty, thereby killing all enjoyment in the process.

Let us also disabuse ourselves of the belief that compulsion and drill methods of instruction can achieve the quickest progress in war-time conditions. The writer's experience, which seemed to be almost general, in a training battalion in the last war, was that most overseas drafts had at the last moment to be hurried through the minimum, and grossly inadequate, range practices necessary to qualify for overseas drafting just before they embarked. They were still utter novices at shooting, and not infrequently had to be sent into the line on arrival at the new theatre. In war such circumstances are unavoidable. But they had been trained to look on shooting instruction as a parade which could not be continued without weapon training gear and ranges, and so their knowledge stagnated until further instruction became available.

Yet few competition shots will disagree that as much, if not more, shooting can be learned from argument and discussion in club and barrack rooms and messes as on the range itself. If those drafts had merely had their appetite for shooting whetted in the short time available, they would have sought out the greater knowledge for themselves on board ship and on arrival, and practised it whenever opportunity offered. They would then have quickly become better shots than they ever became. In short, the quickest way to make a man proficient at shooting in peace or war is to rouse his interest in shooting as a sport. He will then largely train himself.

Finally, let us make a little factual research, instead of voicing wild opinions, on the standard of shooting accuracy that the average man can achieve. The writer's limited experience leads him to believe that the vast body of competitors at Bisley have merely average natural ability, and that their greatly increased accuracy is due almost entirely to their increased interest in a subject that they have come to regard as a sport, instead of as a parade. If experienced competition shots refute this, he would be very willing to bow to their superior judgment. He would not be swayed, however, by the opinion of any whose experience was confined to classification shooting, for they would clearly have insufficient experience to be able to make a comparison. But whatever solution is offered, " one round, one body " at ranges up to four hundred yards, even in ideal conditions, entails grouping to a very maximum of four and a half inches at one hundred yards without cover, including snapshooting and rapid, and there is no escaping the fact. It seems probable that most soldiers have the natural ability to come very near to such a standard, and that compulsion and drill methods of instruction are the main obstacles to their attaining it.

INDO-CHINA

By Lieut.-Colonel H. E. Crocker, C.M.G., D.S.O., F.R.G.S.

INDO-CHINA is really a geographical expression which embraces the five States of Tonking on the North, Annam along the eastern coast line, Laos on the West, Cambodia and Cochin China to the South. The country is divided into two entirely separate regions by the rough straggling range of the Annam Mountain which take off from the mountainous massif to the North of Tonking along the Chinese border and stretch Southward to the plains of Cochin China. From this main range numerous branches jut out to East and West, the whole being covered with forest and dense, almost impenetrable jungle, the home of the wild elephant, tiger, and other game.

To the East, the mountains slope down to the alluvial plains that fringe the sea. Here are the principal rice fields that have made Indo-China famous throughout the ages as a rice producing country. These plains, the deltas of the rivers that flow to the sea, are very fertile. Cut up by innumerable dykes and streams, they are highly cultivated by the peasants, aided in up-to-date methods by the French.

The State of Tonking is enclosed on the North and North-West by high mountains, almost unexplored regions, the home of wild tribes and deadly disease. The town of Lao-Kay—" Old Street "—is one of the gateways into China.

The centre of Tonking consists of masses of small hills covered with jungle and bamboo. Through the country from North to East flows the mighty Red River with its two tributaries, the Claire and the Black Rivers. Between the Red and Black Rivers lies a thickly wooded mountain range which reaches to a height of some 10,000 feet. Just short of the Chinese frontier to the North-East, the river Cao-bang runs through grass plains and rolling downs intersected with broad valleys. It has a basin of its own quite distinct from the Red River.

In Annam, where the spurs of the main ridge jut out to the East, lies the hill station of Dalat about 5,000 feet above the sea. It is a delightful spot built on the shores of a lake and a favourite resort of the wealthy merchants of Saigon. Prices of accommodation and supplies are far beyond the reach of the ordinary citizen. It is connected with the Trans-Indo-Chinese railway by a branch line. Near Dalat lies the plain where the natives hunt the wild elephants and tame them by thrashing and starvation until they are quiet enough to work on plantations and for use in processions.

To the South, Indo-China broadens out into a series of plateaux between the River Mekong and the coast of Annam. This area is little known and until recent years the only means of travel for the natives and French officials was by elephant transport. The principal means of communication is by boat on the river which runs from the distant North past Phom-Penh, the capital of Cambodia, to its delta South of Saigon. Minor roads, which are often impassable during the rains, connect the district with the Mandarin Road and the Trans-Indo-Chinese railway which follows the East coast to Hanoi. The railway has a metre gauge and the locomotives burn wood fuel. There are no sleeping compartments on the trains as they do not travel at night and passengers are put up at hotels until the train starts in the morning. North of Hanoi the line is continued to Yunnan, in China, crossing the frontier at Lao-Kay. The northern extension was constructed at immense cost of life from disease, both for Europeans and natives, through intensive malarial districts.

Railways in Indo-China are State-owned and in time they will be inter-connected into one continuous system throughout the country. Numerous branch lines have been built and will be extended to serve outlying districts, which at present can only be reached by tracks and indifferent roads usually impassable during the rains.

Travelling by train in Indo-China can be a most amusing experience, as I found when I visited the country some years ago. The train is divided into first, second, and third class compartments, with several fourth class box cars at the tail end which are devoid of springs and have a rough sort of kitchen where passengers can cook their rice and fish. There is invariably a tremendous crowd of native passengers who bundle in on top of each other with a great pile of baggage of all descriptions, including rickshaws, livestock, and the inevitable babies which are all huddled in together amid a chorus of screams, howls, and yelps of laughter. They are an extremely good-natured crowd and do not seem to mind being herded up together. Indeed, they seem to prefer it to being by themselves. The thought of travelling in the white man's " fire carriage" is the most wonderful thing that they can imagine, no matter in what discomfort. There are no colour distinctions except that Europeans are not allowed to travel fourth class. There is generally a rough sort of kitchen at the end of the last carriage where passengers can obtain a certain amount of food.

So far the French have concentrated on railway construction through Annam on the East coast and a few branch lines from Saigon. There are no railway connections to Cambodia and Laos or to Siam. The Siamese railway from Bangkok stops at the Cambodian frontier.

The main highways are connected with the Mandarin Road to the East by a network of roads which traverse the great Annam ranges and are interlinked with other roads built at much lower cost and provided with light bamboo bridges which call for an experienced driver. The main roads are open for motor traffic all the year round except, of course, when the bridges are carried away by floods. Oxen, ponies, mules, and horse- and ox-drawn carts are all used by the people to carry their merchandise to and from market. Men and women carriers are still largely used in the hill country and can carry immense loads in much the same way as the hill porters of India.

As in Siam, great use is made of the waterways which run in all directions in the low-lying country. Canals have been dug to connect up the various streams with the roads. Banks have been strengthened in many of the rivers of the deltas in order to assist agriculture and also to improve water transport.

The Chinese built the Mandarin Road when they invaded the country some 2,000 years ago. It follows the East coast as far as Saigon, which they fixed as the frontier of Annamese speech and civilization. To the North the road stops at the Gate of China just beyond Lang-Son, in North-East Indo-China, where it connects with the southern Chinese post road that runs up to Canton.

Since the French have occupied the country, immense constructional work has been carried out on the system of roads. At least 20,000 miles of roadways have been built and are now open to motor traffic. They are kept in a state of repair by gangs of coolies which are ever at work on them, repairing bridges and clearing away the falls of earth and rock which occur during the rains. Where the roads cross the muddy estuaries of the rivers which flow down to the coast, trackways of bamboos have been laid which give a good foothold for wheels. Road traffic is immense, both cars and buses, the latter crammed to capacity with passengers and baggage far in excess of the lawful load, but no one seems to object.

Yunnan
C H I N A
Black R.
Red R.
Chiru
Laokay
Caobang
Nanning
TONKING
BURMA
Langson
Moncay
HANOI
HaoBinh
Haiphong
GULF OF TONKING
Vinh
Vientiane
S I A M
Savannakhet
Quangtri
Hue
Tourane
Mekong River
Bangkok
Aranh
Sisophon
Battambang
CAMBODIA
Nha-Trang
Dalat
GULF OF SIAM
Phom-penh
Saigon
COCHIN CHINA
0 50 100 200
Scale of Miles

INDO-CHINA

From Saigon there is a good motor road which runs to the North-West past Phom-Penh, Battambang, and Sisophon to the Siamese frontier at Aranh, where it connects with the Siamese railway to Bangkok.

I travelled by car from Saigon for some distance up the main road and found the road traffic most interesting and amusing. There is always so much to see, men and women scurrying along with long poles slung over their shoulders with heavy burdens at each end, which may contain anything from a live pig to a baby. Temples and shrines occurred at frequent intervals and every now and then we passed processions to the temples with their orchestras of drums, flutes, and trumpets which raised a terrific din. People of every race, creed, and variety thronged the roads—Annamese, Chinamen, and men and women of the wild tribes from the hills seeking work in the mines and plantations. Many of the skilled workmen whom one sees busily employed in their little workshops are Chinamen whose ancestors wandered down the old Mandarin Road centuries ago and settled in the fertile rice-growing lands along the East coast. They brought their civilization and religion with them and have left a strong influence on the people of the country. As they progressed, the original inhabitants were gradually pushed Southwards, and in course of time became amalgamated into the Annamite people who inhabit the seaboard of the China Sea in what is now known as the State of Annam.

The Chinese were expert traders and mechanics as well as farmers and industrialists and set up in business of varying kinds in which they excelled. They are, however, not popular among the native populace owing to their business acumen, the unscrupulous way in which they avoid paying taxes, and their skill in taking advantage of their less guileful neighbours, by whom they are denounced as parasites who fatten on the labour of the people. Their wealth, which they send to relatives in China, confers no benefit on the country of their adoption. A Chinaman will usually bring his wife with him and will, in addition, often take one or two local women as concubines. The children of these mixed unions are generally strong and sturdy and rapidly amalgamate with the local population.

The Annamese, who dislike the Chinese immensely, remain aloof and are gradually drifting Southwards from Tonking and North Annam into Cambodia and Cochin China. Although the Cambodians resent the influx of these outsiders into their territory, they do not offer violent resistance, preferring rather to leave their homes than to struggle against the intruders whom they annoy with robbery and murder when opportunity offers.

Ancestor worship is the general cult of the Annamese but they also revere dolphins, trees, and rocks, while such animals as the rat, the silkworm, and the elephant share their worship. They dread the tiger, and in many parts of the country their houses are raised on high piles to escape attack from these animals. They will never refer to a tiger without prefixing the honorific title of "Lord" before the word tiger. They are as a rule far cleaner than the Chinese and their villages are free from the usual filth and stench of a Chinese village.

The wilder tribes in the State of Laos are encountered to the West of the country and can only be reached by the mountain tracks that branch off from the Mandarin Road. Here the Man, the Moi, and other tribes have their being in the hills and forests. They are as a rule a friendly people and welcome the traveller to their villages, but will not normally invite him into their homes which they regard as something sacred, not to be entered by an outsider or stranger. They have several customs which are at once amusing and practical. While the rules governing the

conduct of their married women are strict, the girls are allowed considerable laxity in the conduct of their love affairs. Should, however, a married woman be caught with her lover, the lover is punished for her first offence and the woman goes free. If she is foolish enough to be caught a second time, she then has to undergo punishment. In the event of a third offence on her part, neither she nor her lover is punished. Punishment is then inflicted on her husband on the grounds that either he is a fool and unable to control his wife or that he connives at the offence.

The people of Laos have a custom of grinding their teeth with stones to the level of the gums, which inflicts intense pain for some time and prevents the unfortunate victim from eating for a week or more. No girl or man can hope to be married if she or he refuse to comply with this custom.

The Moi travelled Southwards from China several centuries ago and now live in the forest-clad hills. The name Moi is derived from the Chinese ideograph representing barbarian. They suffer much from disease, and infant mortality is high. They are a scattered people unaccustomed to steady work and are therefore unsuitable for plantation labour. They can stand the climate better than the Annamese labourer and are adepts at clearing the jungle. They are apt to take their departure when the whim seizes them. They are now being trained in rubber tapping, coffee planting, and cultivation of pepper.

As regards political inclinations, the bulk of the people of Indo-China may be said to favour the Emperor of Viet Nam—Bao Dai—and the Viet Nam Government. They have a profound dislike for the Communists, the adherents of the rebel leader, Ho Chih Minh, owing, among other things, to their practice of commandeering the villagers to act as beasts of burden for the rebel forces operating round the Red River delta. Many thousands of people in the northern areas of Tonking where the Communists are in control have left their homes and have joined up with the French. It is stated that over 2,000,000 Roman Catholics have turned against Ho Chih Minh.

The Red River delta is of the utmost importance to the French, both from the strategical and the economical point of view. The port of Haiphong at the mouth of the Red River is connected with Hanoi by road and railway, and at the port all stores and personnel for the French are landed. The delta itself consists of a rich alluvial plain intersected in all directions by muddy creeks, and it is in this region, so richly fertilized by the mud washed down by the rivers, that the rice of Indo-China is grown which has made the country famous throughout the East, and has earned for Indo-China the sobriquet of the " Rice Bowl of Asia." In former days immense quantities of rice were exported which led to the wealth of the country, and its capture would be a well worth-while prize for the Communists.

There are extensive open work coal mines North of Haiphong and several factories of glass and china, cement, and other industries have been established in this district. Owing to the French colonial system, however, colonial industrial development is thwarted and is not allowed to compete with the economic and industrial needs of France. It follows that, in a country where raw materials abound and cheap labour is to be had in abundance and where over-population demands adjustment, there is but little industry and Indo-China is quite incapable of supplying her own needs in manufactured articles, nor could she contribute to the production of armaments or goods for export.

All mining matters in Indo-China are handled by a special branch of the Government, the Department of Mines, with its headquarters at Hanoi. Most of the mining

is carried out in Tonking where coal, zinc, tin, and gold mining activities have been practised by the Chinese for centuries. The majority of the miners are Annamese, while the skilled workers, carpenters, timbermen, etc., are Chinese. Working conditions in the mines have been greatly improved in recent years and great attention is paid to health measures and hospitals. The mine superintendents are French.

Rubber growing has been successfully developed in the southern part of the country. The trees do best in the virgin soil of Cambodia and Cochin China, where the forest has been cleared for the plantations. This was an expensive business and the virulent malaria, which is the curse of the land, caused many deaths. Communications were difficult and it was often found that the most suitable areas for the trees were almost inaccessible.

Tea and coffee are grown in a number of districts, and at every little village by the roadside one sees groups of people sipping their tea from the fragile porcelain cups of China. The " Chai-khana," or tea house, is a great institution where one meets one's friends for a morning chat.

One of the most prolific, and at the same time most paying, industries is smuggling which is carried on across the border into China, opium being one of the easiest commodities carried by the " trade." The Chinese frontier abounds in smugglers and brigands who know every inch of the country where it is practically impossible to hunt them once they leave the beaten tracks. They have their well organized intelligence service to warn them of the approach of the Customs authorities and find no difficulty in eluding them in the hills and forests. When hard pressed by the gendarmes, smugglers have a habit of burying their treasure in some secret cave known only to themselves which they leave under the protection of the " Sealed Mouth." In the cave they leave a young girl, stupefied with opium. Her lips are bound with a silk scarf and into her ears the smugglers whisper the secret words by which the treasure can be found. They then abandon her to die alone without recovering consciousness. The idea underlying this procedure is that, as she has been unconscious, she cannot repeat the formula while if anyone else tries to discover the treasure the ghost of the girl will strangle him. When the coast is clear the smugglers return for their opium and continue their journey to where they can obtain a good price for their goods.

In Saigon, however, there is no difficulty whatever in obtaining as much opium as one requires. It is a Government monopoly and is sold openly. I spent a week or two in Saigon, a well laid out typical French Colonial city with broad streets and some fine buildings. There were crowds of people passing to and fro, clad in every variety of dress, from the severe white of the Europeans to the sarongs and lungys of the natives and the gaily coloured pyjamas of the Chinese girls. In the canal were masses of junks laden with rice and other products from far away up country in Cambodia, each junk with an eye painted on the bows—" Ship no have eye, how see way ? " asks the skipper with a certain show of reason.

Saigon is an important airport on the direct route to the Far East from Europe. I landed at the aerodrome some little distance from the city, which was reached by a road through the rice fields. Air bases have been constructed with considerable difficulty owing to the hilly nature of the interior of the country, which is broken into deep valleys and hills covered with impenetrable forests. The coastal plains are often flooded and are, moreover, intersected with canals through the rice fields which add to the difficulty of airfield construction. Great improvement has, however, been achieved in the construction of the airfields and there is now a regular service of

planes of Air France between Saigon and Hanoi, with extensions to Vientiane, Tourane, Hue, and Vinh, on the coast South of Haiphong. A weekly service from France has been started, leaving Marseilles and flying through Syria and India to Bangkok, and so to Saigon. The journey takes seven days. From Saigon there is, in addition, an air service to Singapore.

As to the future of Indo-China, it is impossible to speak with any degree of certainty. The situation seems to have reached a stalemate, with the French holding stoutly to the Red River delta with an outer and an inner perimeter of defended posts and villages, while the Viet Minh forces, trained and equipped by the Chinese with Russian weapons, hold the passes into the country and communications to the southern districts. Neither side can gain a decisive victory and, according to the latest reports, both sides are anxious for peace. The French are becoming restive at the great expense of the war and deeply resent the loss of life of their best troops for what now appears to be an indefinite campaign. Reports are also to hand that the Viet Minh have approached the Indian Government with a view to soliciting their mediation for the consideration of peace terms, but so far these requests have been turned down.

A possible solution might be found in the creation of a buffer State immediately South of the Chinese frontier, to be under the control of the Viet Minh, while the French are left in undisturbed command of the Red River delta and the entire country to the South of Tonking.

IMPERIAL DEFENCE COLLEGE TOUR TO CANADA AND THE UNITED STATES, AUGUST—SEPTEMBER, 1951

By Rear-Admiral R. M. J. Hutton, C.B., C.B.E., D.S.O.

As part of the year's course at the Imperial Defence College, the Summer break in August and September is partially devoted to tours over a large area of the globe. About half the course visit Europe, a quarter go to the Middle East, and the remainder to the North American continent. This is a brief account of a typical tour to Canada and the U.S.A. which sixteen members of the course, including several from the other Dominions, were fortunate enough to have last year.

Before going into detail it may be of interest to define the object of the Imperial Defence College. It is, in a nutshell, to enable officers and civilians who will probably rise to higher rank to study the military, international political, and economic problems which confront the world to-day, with a view to fitting them for high appointments in the future.

After a period of study in the academic atmosphere of Belgrave Square, there is little doubt that the annual tours mentioned above, while acting as a pleasant break, enable the students to acquire some knowledge of the important areas of the world which will be of value to them in their subsequent careers.

On this occasion we left England on 5th August and arrived back on 6th September, a happy band of warriors on the crest of the wave, and much wiser men than when we set out. In the interim we had travelled on our official business 17,000 miles by air and 700 miles by rail. Some of us, who were ardent fishermen, travelled a good many more, usually in the small hours of the morning or in the middle of the night. These interludes were mostly on rest days, but such is the passion inspired in the sons of the followers of Izaak Walton in such a land of golden opportunity for rod and line as Canada that rest was unthinkable. This is not exaggeration, for witness the highlights. Six rods caught 300 trout in four hours on a wide lake in Quebec's National Park, which had hardly ever seen artificial flies before. A magnificent bag of grayling between two and four lb. apiece was taken from a fast flowing river running out of a practically uncharted lake 90 miles West of Churchill on Hudson Bay. But I digress.

The Tour in Canada

After arriving at Montreal, we had a brief tour on a lovely crisp sunlit morning round the lakes and river before the next plane took us on to Ottawa. Here we were given our background, so well expressed by that dynamic character, the Hon. Brooke Claxton, K.C., M.P., Canada's Minister of Defence.

"On your visit you will see, in addition to defence establishments, something of the physical character of our country, its industrial capacity and its economic resources. In appreciating our defence problems, programme, and potentialities, these factors must be considered in relation to our membership in the Commonwealth and in the United Nations, our close and friendly relations with the United States, and our adherence to the North Atlantic Treaty. We are convinced that we should work even closer together to build the united strength which alone will deter aggression. Your visit will add to the strong ties that exist between our countries."

During our three-day stay in the capital of Canada, we were addressed by Air

Marshal Curtis, the Chief of the Air Staff, on the general military problems, by Mr. C. M. Drury, the Deputy Minister of National Defence, on international affairs, and on the geographical and economic features by a professor of economics. On our last morning Mr. Claxton was good enough to spare some of his time to talk to us on current events.

On the practical side we visited Petawawa Camp, a vast training area many times the size of Salisbury Plain. It was most interesting to go round the camp and see what is being done to make life comfortable for the Canadian soldier off duty. Married quarters with good houses, centrally heated and fitted with every modern convenience and gadget; schools with airy class rooms, each child with its own locker, communal dining rooms, and all beautifully laid out. Some of these amenities seemed a trifle lavish to British eyes accustomed to austerity, but one has to remember that Canadian winters, with temperatures of 20 degrees below zero being considered almost sultry in mid-Winter, raise problems quite outside our ken.

We also witnessed some first class airborne training and artillery demonstrations, rounded off by a naval member of the party firing a tank gun and a R.A.F. Group Captain controlling a battery of light artillery. Neither hit the target, but each got near enough to uphold our reputation at a pinch!

Interspersed with the official side of the tour we were able to meet at luncheon and cocktail parties many prominent Canadians in Service and civil life and here let me mention a theme which will recur. Canadian hospitality is world renowned, but only those who have met it on its home ground, as we did, can appreciate how deeply that renown is merited.

From Ottawa we returned to Montreal, Canada's largest port, for a 24-hour visit. A tour of Canadian Vickers, Limited, and a trip round the harbour in the harbour master's tug were the highlights. Not everyone realizes that ice closes the river to shipping for four and a half months every year, so that when the port is open there must be no waste of time. To exemplify this, the tug that took us sight-seeing towed barges from ship to ship as opportunity offered.

Canada is extremely air-minded, so it was not surprising to find ourselves in Quebec a mere hour after leaving Dorval Airport on 10th August. We spent the week-end in this picturesque French Canadian city with its famous history and superb views over the St. Lawrence River. We were quartered in the Citadel, the home now of the Royal 22nd Regiment. From our rooms there was a sheer drop of 360 feet to the river, which made a large liner of about 20,000 tons look like a small coaster. Surveying the glorious view as the light faded, one could not but help imagining the British ships of the line of some 200 years ago lying below the port and the problem confronting General Wolfe before he was to make his name immortal in victory and death on the plains so ingeniously scaled from the river below.

Like most of the big towns we visited, some important industry was shown to us, and in Quebec we went to the Anglo-Canadian Pulp and Paper Mills built on reclaimed land and resting on 7,000 piles driven into the sand beside the confluence of the St. Charles and St. Lawrence Rivers. This plant is typical of scores of others throughout the Dominion and the production of wood pulp and newsprint is second only to wheat as the most extensive export commodity. The local production consisted of 700 tons of newsprint daily and about 60 tons of paper board. The paper is made from Balsam fir and spruce wood, and is a blend of grained wood pulp and sulphite pulp. The great piles of four-foot logs, rising like pyramids, are a feature of

all these plants and the logs are fed by conveyer belts into huge rotating drums which strip the bark from the timber. The logs, before being pulped, are massed parallel to the shaft of a large revolving grindstone and forced by hydraulic pressure against the moving surface of the stone, which rubs the wood into fibrous particles. As paper made entirely from grained wood pulp is too weak for newspapers, a certain amount of stringer pulp made by a chemical process is mixed with it ; so other logs must be cut into chips to make the sulphite pulp. There are many other processes before one sees the paper machines, moving at incredible speed, turn out the finished article, and we left this most interesting plant marvelling at the ingenuity of man.

Our next stop was at Arvida, where we spent a busy day viewing the " Ship Shaw " Hydro Electric Power Station and the Aluminium Company of Canada's smelting plant. It is no accident that these two concerns are located together, as a great deal of electrical energy is required for the processing of aluminium. The imagination in the layout of the Ship Shaw installation is a joy to behold. Picture this plant, which with its subsidiary " Saguenay Power Company " has a combined capacity exceeding 2,000,000 horsepower, situated in a fold of a vast gorge 100 feet above the water on the output side in delightful surroundings. As we walked round this inspiring structure, down passages of interminable length, in and out of lifts between floors, we hardly met a soul. To our enquiries about staff the work's manager replied modestly " 210 men maintain the plant, working in three shifts of 70 each throughout the year, but you only see them if something goes wrong and then they have to move." High up on the top floor is the control room, a mass of knobs, dials, gauges, and all the paraphernalia that goes with modern industry. In it was just one man, monarch of all he surveyed in this store house of pulsating power.

Space does not permit me to describe the next part of our tour, the experimental farm at Kentville, the beauties of the Annapolis valley, Halifax, Nova Scotia, where the nautical members of the party met many old friends, and the oil refinery at Dartmouth. So let me continue in a sleeping car on the Canadian Pacific Railway *en route* for Sudbury.

Sudbury is famous for its nickel mining and is the centre of this field of Canada's mineral wealth, which produces about 80 per cent. of the world's supply of nickel. The particular mine visited was the Frood Stovic open pit and the raw material is removed in Diesel trucks which transport the ore to a giant crusher, where rocks weighing as much as five tons are pulverized in a few seconds with a noise reminiscent of a battle squadron's 15-inch broadside. Sudbury is a typical Canadian mining town and is developing fast with a cosmopolitan population, where almost every language under the sun can be heard.

We spent the following night once again in our sleeping car *en route* to Toronto where we had another extremely active 24 hours touring Canada Packers A. V. Roe's aviation plant, and ending up with an official reception in the evening with the Canadian R.N.V.R. in their headquarters, H.M.C.S. *York*.

Canada Packers is an establishment that, once seen, is never forgotten. Some thousands of cattle, pigs, and sheep are slaughtered daily and the carcases are dealt with on a mass production system. Each man has his job as the " meat " goes by and the whole place is a model of efficiency. The live pig to the ham in its tin ready for export is achieved in under 30 hours, and perhaps the real highlight as a spectacle is the gang of men working on a piece rate system who prepare boneless meat, with their knives moving so fast stripping flesh from bone that the eye can hardly follow the blade.

From Toronto we drove by bus to Niagara, by way of the Welland Canal where the party spent a week-end. The Niagara Falls are quite magnificent, but it is a pity that they have been so commercialized. The Victoria Falls in Rhodesia, left as they have been in their natural state, are grander and, by their very height, more awe-inspiring. On the other hand the cataracts leading up to the Canadian falls are much more impressive than the swift glide of the Zambesi. One of the features of Niagara is their illumination by coloured searchlights after dark when some of the colour blending is breath-taking for sheer beauty.

After a period of sight-seeing we once again found ourselves airborne for the Lakehead ports, Port Arthur and Fort William. These two ports, which are only three miles apart, serve as the railhead exit for the grain and minerals of the Prairie provinces. Between them they deal with over 250 million bushels of grain each year, and a visit to one of the big grain elevator plants is an education. As an example of efficiency, a 25-ton grain railway wagon is emptied in under three minutes by clamping the truck in a vice, pushing a light door in with a hydraulic ram, and emptying the grain by the simple expediency of revolving the truck to a vertical position first one way and then the other. A small boy then sweeps out the few remaining husks in the same nonchalant manner that the charlady sweeps the office carpet. This form of mechanization alone saves thousands of man hours monthly, and from cleaning and drying to storing and transporting, the labour of man has diminished steadily with the years; a vital consideration in a country where more and more manpower is required.

The next stage of our tour took us to very different climes, and in a four-hour flight over land, water, and more water and less land, we left the tree line behind to descend at Churchill in the sub-Arctic regions of Hudson Bay. In August the weather can be as perfect at Churchill as anywhere in the world and we were not disappointed. We found blue skies without a cloud, that long horizon which clean air and vast spaces alone can produce, and a crispness which makes old bones feel young.

Churchill is in many ways unique. Established originally as an outlet for the fur and grain trade, it still has all the scope needed for the adventurous. An important air station, the centre of experiments for traversing the muskeg in Summer and for living in the Arctic in Winter, it has a thriving and enthusiastic community. Immediately beyond the limits of the station one can travel thousands of miles into the blue, North, South, and West. A quarter of a mile taught our party a few of the facts of life in this part of the world. The muskeg, which looks so inviting with its wild flowers of all descriptions, can be a snare and delusion, for underneath there is bog and a man must know the feel of the land to get anywhere. And the flies! Thousands of them to every acre soon took their fill of new blood, in spite of the obnoxious liquids with which we had anointed ourselves. Like everything else in the far North, you must have the "know how."

The next day we took off for a 1,430 miles' flight to Whitehorse in the Yukon and here again fortune smiled on us with a perfect day without a cloud. When we struck the Alaska highway West of Lake Athabaska, we descended to 700 feet and flew up the highway for nearly 300 miles. Hurtling through the air at over 300 miles an hour, we followed the twists and turns of the river, alongside which the highway has been constructed, and at times it appeared that one could have thrown a stone from either wing tip on to the massive mountains rearing up into the blue on either side of us.

Whitehorse has a character all its own, both in the rugged grandeur of the surrounding scenery and in the independence and vigour of its inhabitants. The traditions of its origin as a centre of the gold rush still prevail to some extent. It is a town of contrasts; the shack alongside the modern house of the well-to-do, the ancient Ford of a bygone age rusting in the ditch while a few yards away the latest Packard gleams outside a house which could barely garage it. Generally, the town and its appendages give one the impression that there is no time or reason to dispose of discords; they just moulder *in situ*. On the banks of the fast flowing Yukon River the old stern wheel paddle steamers are still moored. Ghosts of the past, what stories they could tell if they could speak of the old timers they must have conveyed to find riches or penury in the days of the gold rush.

It was with real regret that we took off for Victoria, B.C., next morning after a crowded evening of sight-seeing, talks on the military tasks and the problems of maintaining the highway by the local military and air authorities, and all interspersed with the usual magnificent Canadian hospitality. As for the fishermen, to have to leave such a piscatorial paradise without the opportunity to test their skill was almost more than they could bear.

On our long trip to Victoria we saw one of the greatest menaces of the Dominion in its angriest mood. British Columbia and Vancouver Island had been subjected to a particularly dry Summer and there were several terrifying bush fires raging. Seen from a height of 20,000 feet, these walls of fire seemed to extend interminably until everything, even at that height, was blotted out by smoke. At one time our pilot informed us that we might have to land at Vancouver instead of Victoria owing to the visibility, but happily we flew clear a few miles from our destination.

Our three days at Victoria were full of interest. The beauty of the town alone is worth a visit and, despite the arid effect of no rain in months, little imagination is required to picture the countryside in the Spring. On the official side, we all had the honour of meeting the Governor-General, Lord Alexander, at an informal party, and spent a morning at " Royal Roads," the Joint Services Training College which caters for 150 cadets for all three Services for two years. There can be few educational establishments in the world with more beautiful surroundings.

The industrial highlight was a visit to a saw mill. Here the famous Douglas firs, up to eight feet in diameter, are hauled up from the river and fed into travelling circular saws. These leviathans of the forest are cut up into lengths in a few minutes, each slab being thrown onto a moving table where they are fed into smaller saws which cut out planks according to taste.

On leaving Victoria we had our only sea trip of the tour, much to the joy of the naval officers in the party, when we embarked in the destroyer H.M.C.S. *Crusader* to take us to Vancouver. Bush fires had caused a dense fog in the approaches to Victoria harbour, but radar has changed the heart of the mariner towards this menace of the seas and, standing on the bridge with Commander Groos, the radar picture of land and shipping gave us plain sailing, and our nostalgia arose as we cleared the fog banks at 25 knots to make up time.

Time did not permit us to stop at Vancouver and we took off, within the hour, to fly to Lethbridge across the Rockies. Cloud was prevalent but not dense enough to deprive us of all views of this rugged scenery of peak and canyon.

At Lethbridge we were looked after by that big-hearted Canadian, Ernie Macfarland, who, among other attributes, is an Indian chief, and who entertained us

in his private bar, famous for its almost unique collection of pictures of Wild West days which decorate the walls.

The next morning we visited a cattle ranch covering 300,000 acres of rolling country, now given over to the raising of Canadian beef cattle. Before going out on the range, the foreman stockman gave us a demonstration of bare-back riding on a particularly fine grey stallion, used for stud purposes, and we then visited the corrals.

The main excitement here was the examination of a ferocious looking young bull, who was off colour. Modern methods are very different to those of the lassoo and handling of bygone days. The animal, having been driven into the corral, was coaxed up a narrow passage between stockades, then through a gate into an even narrower passage with just room for his body to move along. At the end of it was a device known as a " squeeze." On reaching the terminus a stockman operated a lever which clamped the bull with a steel contraption over his back and shoulders, holding him quite rigid except for his head sticking out through a hole. With blazing eyes and considerable snorting, he was then subjected to an examination. The fun started when he was released, the visitors having been warned to keep clear by scrambling up the sides of the main corral. The bull showed his indignation for treatment received by tearing round, at intervals charging head-on at the stout timbers of the stockade. For our benefit some of the stockmen left their leaps to safety to the last split second and with a crash the bull would hit the posts a few inches below their legs. After some ten minutes of this absorbing entertainment he trotted out. I suppose he felt that honour had been satisfied, but he must have had quite a headache.

Next we drove out to the ranges where four cowboys gave us a demonstration of rounding up a herd of about 500 head. After the round up, when the whole herd was stopped in its tracks a few yards from the line of motor cars on the crest of a hill from which we had watched the proceedings, the equestrians among us took to their saddles. To the great disappointment of the rest of us no one fell off !

That afternoon we had a short flight to Edmonton, the last stopping place of our official tour in Canada, and here our time was divided between the Services and a tour of the Leduc oilfields. The finding of oil in Alberta in large quantities is a comparatively recent and expanding development, and new drillings are much in evidence. With oil comes riches, and Edmonton is thriving and growing in consequence with its oil prospects enhancing its importance as a centre of the agricultural products of Alberta.

On our last evening we were given a memorable final reception under the auspices of General Vokes and Air Commodore Bennett in the Combined Services mess, ending up in the small hours.

We left Canada with deep regret. All we had witnessed of the rapid growth of Canadian industry, and the cheerfulness and optimism of her citizens, left us in no doubt that Canada is one of those areas of the globe where the future is bright and expanding. Manpower and money they must have and will get, and whatever can be provided from the United Kingdom will always be welcomed by the vast majority of her people.

The Tour in America

On 28th August we left Edmonton for Omaha, Nebraska, a long flight over the prairies of the Dakotas. On this trip one sees, especially in Summer-time, a never-to-be-forgotten sight. On a clear day from 20,000 feet the earth below looks like a giant

chequer board. Field upon field is laid out either in strips up to ten miles long by some 300 yards wide or in squares several miles across ; each field, in August a gleaming gold, is flanked by a similar one lying fallow in a dusky brown.

The next day we visited, for all too short a time, the American Strategical Air Headquarters at Omaha where we had the most interesting lectures, meeting Generals Le May and Sweeny. " Strat Air " is an impressive set-up and it is obvious that there is a driving force behind the organization and a most marked belief in discipline.

By eleven in the morning we were again airborne *en route* for Fort Benning in Southern Georgia, and some of us spent a great deal of the day watching the unfolding of the American continent below us ; across the Mississippi and the Missouri, the former still showing clearly in the ravaged areas along its banks where the disastrous floods had played havoc some few weeks before our flight. As we flew South, the country changed from northern prairies, with their great river valleys and plains, to the tropical greenery of the South, and as we came down to land the heat hit us.

General Church, the G.O.C. Fort Benning, met us on arrival and we drove up to the central administration block of this training centre, which covers an area many times the size of Salisbury Plain. The General had recently returned from Korea and had been entrusted with the task of training American G.I.'s on tougher lines following the lessons learned from the early part of the campaign. Our party was received with a band, a saluting battery, and three companies of infantry as a Guard, typical of the big way in which things are done.

The next day was a busy one. We witnessed airborne training, artillery and anti-tank weapon training, and an airborne drop, all of which were carried out in an efficient and thorough manner. All our party did a " Buddy Seat drop " and were given the appropriate certificate. The procedure is that one is strapped into a chair on a parachute which is hoisted to the top of a 250-foot tower ; on arrival, and with somewhat startling suddenness, the parachute trips and the chair hurtles earthwards to be violently retarded just before reaching the ground, with a result that one bounces back into the air again, giving some fine facial studies for the benefit of the onlookers.

Apart from all the military demonstrations, which were of great interest, we were given an insight into the way the American officer lives off duty. Their system is very different from ours. There are no messes comparable to the British model, and life centres round the club. These Service clubs, in which every amenity is available from swimming pools and restaurants to reading rooms, are family affairs. Junior appears with his parents for food and recreation and the amenities are lavishly laid out.

On 30th August we flew up to New York for three days, where official business was cut to the minimum to allow the party to see something of the city. We spent one morning at the United Nations building where the Main Assembly Hall and many Committee rooms were still in the course of construction. Here, apart from a conducted tour, we had some most interesting talks on the organization, procedure, and current work of the United Nations.

On another occasion we met General Krittenberger, the General Officer Commanding the American First Army, with his headquarters on Governor's Island. This was followed up by a tour of the harbour in his launch, and the best way to really appreciate the immensity of New York's skyline with its fabulous buildings is to see it from the water.

Before arriving at Washington, some of us visited Annapolis, the American naval training college. It is most beautifully laid out, and many of its customs are very similar to those of our college at Dartmouth. It is on a very different scale, though, as Annapolis now has 4,000 cadets under training.

America is justly proud of its naval college and, as it belongs to the nation, it is open to the nation. On the Sunday we paid a visit, hundreds of people, many quite unconnected with the college, were parading through the grounds, inspecting the halls and chapel and watching the various activities of the cadets despite a thoroughly wet afternoon. Our own visit was entirely informal and we were all struck by the meticulous good order and cleanliness of the whole place and the smartness and turn-out of the American cadets.

It was fitting that our short tour in the United States should end in Washington, her capital city and seat of Government. Our party collectively, being mostly Service people, had travelled a great deal over the globe and we were mostly agreed that Washington was the most beautiful town we had ever seen. The only asset of architectural beauty that Washington cannot yet provide is antiquity, but the passage of time will look after that in the years ahead. As in New York, our stay was not overburdened with official business and we were able to see a great deal of this beautiful city and its surroundings.

We spent an absorbing morning going round the Senate and a day with our American counterpart, the National War College. The curriculum is very similar to our own, lectures followed by discussions and the practical work done by syndicates.

But perhaps the biggest contrast is in the matter of amenities. Each American student has his own study, with a battery of telephones, a typewriter, and a dictaphone. We may not be wholly losers thereby, as human nature being what it is, one wonders if these lavish aids to verbosity and the written word may not result in long-windedness.

Our tour ended on 4th September when we left Washington for Montreal, where we picked up the civil aircraft for our flight home across the Atlantic.

Although our tour in the United States had been very brief, taken in conjunction with the much longer period in Canada the whole cannot have failed to impress all those who were fortunate enough to have such an experience with the vastness, the wealth, and the resources of the North American continent. Everywhere, too, the kindness and hospitality we received were both quite unforgettable.

THE FORCES UMBRELLA

By Commander J. H. Drummond, O.B.E., D.S.C., R.N.(Retd.)

During the South African War, it became clear that it would be necessary to have an organization which would make itself responsible for the welfare of our soldiers and sailors, both while serving and after they had left the Colours. For this purpose, The Soldiers and Sailors Help Society was formed in 1899, with H.R.H. Princess Christian as its first president; and, in 1901, the Society was given its Charter of Incorporation. Since then, the name of the organization has twice been made more comprehensive to cover its broadening scope as conditions changed and new needs had to be met. With the formation of the Royal Air Force, the Society changed its name to The Incorporated Soldiers, Sailors and Airmen's Help Society and again, in 1948, to its present title of The Forces Help Society and Lord Roberts' Workshops.

Field-Marshal Lord Roberts had always taken a very keen personal interest in the workshops set up after the South African War, in which men were trained in making a great variety of small articles, and he had envisaged the need there would be after the 1914–1918 War for a network of workshops where disabled ex-service men could be trained and employed in much greater numbers. It was felt that no more fitting memorial to that great soldier could be devised than to carry into effect the work which was so near to his heart, and to perpetuate his name by calling the new workshops after him. During the 1939–1945 War, the Society was asked to extend its scope to include the women's Services, a request to which it gladly responded.

Those called up under the National Service Acts, and those who have served in Allied Forces, are also eligible for help from the Society.

The four objects of the Society were laid down originally as being :—

(i) To help soldiers and sailors by providing them with the name and address of a " friend " in each parish or ward throughout the Empire, to whom they may be commended on discharge from the Army or Navy, for aid in obtaining employment, or other forms of help suited to their needs.

(ii) To establish and maintain permanent convalescent homes of rest for discharged soldiers and sailors who are disabled and necessitous, and to contribute to the support of such cases in their own homes if considered necessary.

(iii) To teach useful trades to men discharged as medically unfit who, by reason of their disability consequent on their service, are unable to take ordinary employment, and to make such cases, as far as possible, self-supporting by disposing of the work they turn out.

(iv) In time of war, to arrange for accommodation of sick and wounded convalescent soldiers and sailors in temporary convalescent homes and private houses.

Organization

In carrying out the first of these objects, the Society has grown into an enormous, world-wide organization, at home under county secretaries, district heads, and " friends " in almost every parish of the United Kingdom and Eire; and abroad with representatives in the Dominions, Colonies, and military stations.

These representatives are voluntary, and due to their devotion to the work and their local knowledge, the Society is able to do its work in the most expeditious manner. This local knowledge enables them to judge the most fruitful type of help to give to each applicant.

It is realized that to find suitable employment is the best way to help anyone in trouble, and our representatives always aim at giving help of a constructive and permanent nature. They keep in touch with local employers of labour, and the Society has an active employment branch.

The Society investigates cases and acts as almoners for Regimental Associations and other organizations, also for various funds on behalf of the War Office, including the Royal Cambridge Fund and Woodman's Charity for Old Soldiers who served before 1914.

The Society has a separate department to deal with its overseas service, with a headquarters in London, and deputy directors in Malaya, the Middle East, and in Germany.

Convalescent Homes

The work envisaged under objects (ii) and (iii) quickly expanded beyond anything anticipated when the organization was set up, the 1914–18 War presenting a problem of a magnitude unknown in our previous history, but the Society has proved equal to all demands made on it. Two convalescent homes for men are maintained, St. Vincents, Ryde, Isle of Wight, and the Princess Christian Home at Knaphill, Surrey : a number of cottages are owned and administered for retired ex-service men, and the Society also administers similar cottage homes on behalf of several regiments. At the moment a group of cottages are being built as a memorial to the men of a certain regiment, whose Colonel has asked this Society to take over the work of building. A Princess Christian Home is maintained at Portsmouth as a permanent home for old men.

Women's Services

Similar services are available for serving and ex-service women as for men. Those who apply to headquarters or to our provincial representatives are sure of advice and assistance in obtaining employment, material help where necessary, and friendly and sympathetic help in solving many personal problems. Many girls in the Services have no homes, and having been uprooted from their civilian environment have nowhere to go on leave, and on demobilization. To meet this pressing need, Linden House, at Leatherhead, has been opened, where women can spend their leave, or go to on demobilization until they find employment. Besides advice and help in getting jobs, some training is given at the hostel itself in domestic subjects. Under a resident tutor-gardener, girls can receive practical training in horticulture, and many girls have availed themselves of this valuable training and have obtained interesting and well paid occupation.

Veterans' Relief Fund

In 1908, Field-Marshal Lord Roberts was much concerned about the cases of veterans of campaigns prior to 1861, many of whom were in institutions all over the Country.

The Field-Marshal launched an appeal for the benefit of these veterans, and a sum was raised calculated to be sufficient to give an allowance to each veteran who

had taken part in those early campaigns. The fund was called the Veterans' Relief Fund, and was administered by the Society, which undertook to get into touch with every veteran wherever he was. A very large number of them were removed from institutions, and given an allowance adequate for their needs.

The Veterans' Relief Fund was calculated to exhaust itself on the death of the last veteran, but owing to the very great care and attention which they received they outlived the fund, and the responsibility for their care was taken over entirely by the Help Society. Field-Marshal Lord Roberts attended the last meeting of the fund in June, 1914.

War-time Activities

During hostilities many emergency needs have been met. In the 1914-18 War, on behalf of the Admiralty, the Society undertook the care of naval convalescents, small groups or single individuals being looked after in private houses throughout the Country, larger numbers being accommodated in temporary convalescent homes run by the Society. After both world wars, men were helped with land settlement, the obtaining of their correct pensions, and many problems connected with return to civilian life.

Lord Roberts' Workshops

During the 1914–18 War, the existing small workshops were enlarged and new ones opened on a much more ambitious basis, the first at Fulham in 1915. The Society now has factories at London, Bristol, Brookwood, Colchester, Liverpool, Edinburgh, Dundee, Inverness, and Belfast, where furniture, including ecclesiastical furniture, bedsteads, divans, mattresses, decorated lacquer work, baskets, and brushes are produced.

For all these commodities, Lord Roberts' Workshops have earned a high reputation for quality and workmanship. Some of these articles can be purchased in the Lord Roberts' Workshops showrooms in the Brompton Road, but the majority of the work is producing furniture for Government offices and N.A.A.F.I. canteens, under contract and in open competition with other civilian firms. The goods sold in a year exceed in value £340,000, while the average disability of the men is over 60 per cent. The Society has always believed, and it has been magnificently proved in practice, that disabled men, given individual training and equipment suited to their needs, could produce goods of equal workmanship to the able-bodied. It is proud that, due to this insistence on craftsmanship, over 3,500 disabled men have passed through its workshops and made good as skilled workmen in open industry. Those who can only work under sheltered workshop conditions remain in the Society's own workshops, and men of over 70 are still in steady employment.

A clinic is maintained in some of the larger factories under the charge of a trained nurse, who is able to give daily treatment to some of the men as well as first aid in case of accident. This enables the disabled to put in more time on their work. There is a small hostel in London where the trainees can be accommodated until they find a home of their own.

The Society's aim of preventing the disabled from falling into a category apart, by training many to take their place in normal employment, and employing those in its own workshops on essential goods, is of great psychological value to the men themselves, and of social importance to the community.

The 1939–45 War

In the 1939–1945 War, at the request of the Admiralty, the Society organized a scheme of comforts for the Navy. Depots were opened and over 600,000 items and

130 tons of vegetables were collected and distributed. On extending its organization to cover women, a special department was opened to deal with their problems. Free hospitality was arranged in private houses all over the Country for rest and recuperation; hostels for serving women were opened; also maternity homes, and a hostel in London for the children of Service women.

In May, 1943, after much preliminary work in getting permission from many Government departments, a parcels scheme was initiated. This arose out of complaints received from overseas Commands that men were spending their money on parcels to send home to their families, which were never delivered. This scheme has been described as the greatest morale-raiser undertaken by any voluntary organization. The food parcels are bought in Australia and shipped in bulk to Liverpool, where they are checked, labelled, and despatched by post to the addresses sent in by Service men. Over three million parcels have been despatched.

Residential Training Centres

One of the Society's most important undertakings is the Princess Christian Home and Training Centre at Knaphill, Surrey. Here there is a basket-shop where disabled men living locally are employed, while others are accommodated in our residential hostel there. In the 1914–18 War, the centre was used as a convalescent hospital in connection with Millbank. Now a special spinal unit is maintained. The centre is in the care of a resident warden and his wife, a trained sister, and a number of male orderlies. These paraplegics receive remedial treatment of the most up-to-date kind and, while undergoing treatment, the men are trained in clock assembly, clock repairs, light engineering assembly work, and invisible mending. These are all occupations which the men continue as home-workers when they are sufficiently recovered to leave the centre and be cared for by their families. The Society continues to look after these men, collecting their work and generally keeping in touch and rendering any practical help or advice needed.

At the request of the Ministry of Pensions, the Society has organized and operates clock assembly and clock repair units at the Ministry's hospital at Stoke Mandeville and at the Star and Garter Home, Richmond.

Another scheme operated by the Society is that of car park attendants. All car parks in Liverpool, and most of those in Edinburgh, are staffed by disabled men, particularly those suffering from T.B. or neurosis, for whom indoor work is not suitable.

Co-operation

The Society works in close co-operation with other Service organizations, and keeps at all times in close liaison with the Ministry of Labour, the Ministry of Pensions, and local authorities.

In spite of all the Government schemes which now exist to provide for what is known as social security, there remain many personal problems which do not fall within any set official scheme, however comprehensive, and to meet these needs it appears that there will always be room for voluntary organizations. Indeed, the very generous tributes paid to the work of the Society by Ministers themselves show that official opinion recognizes how valuable are the voluntary organizations in supplementing the work of Government departments. In 1946, the Society dealt with 170,000 cases during the year in helping men and women to re-establish themselves after the upheaval of war.

DIARY OF THE WAR IN KOREA[1]

16th, 17th, 18th and 19th April.—No change in the situation was reported.

20th April.—Sub-delegations returned to the staff officers, still unsolved, the problems of truce supervision and exchange of prisoners which the staff officers had turned over to them. At the opening meeting of the new series no progress was made, the exclusion of Russia as a neutral supervisor and the limitation of construction of airfields by the enemy during a truce being insisted on by the U.N. delegates.

21st April.—Eighth Army reported the dispersal by heavy artillery of groups of Chinese cavalry in white cloaks near Kumsong.

22nd April.—The U.S. Fifth Air Force attacked the railway between Sinanju and the Manchurian border and reported having cut it in 113 places; rolling stock and A.A. emplacements were also attacked. Superfortresses bombed Sinanju railway bridge.

The U.S. Navy reported that enemy batteries on the North-East coast of Korea had been shelling U.S. warships nearly 10 miles at sea, and that this almost certainly meant that the enemy were using radar-directed guns. The report added that 41 U.S. warships, 31 off Wonsan, had been hit in the last 18 months, and that off the West coast 11 British Commonwealth ships had been hit but only slightly damaged.

23rd April.—At Panmunjom, U.N. and enemy staff officers concerned with prisoner exchanges met for two hours, but no result was disclosed. U.N. infantry repulsed light enemy patrols. Allied warships and carrier-borne aircraft bombarded East coast targets, and other U.N. aircraft attacked northern supply lines.

24th April.—Negotiations at Panmunjom appeared to have reached a difficult stage as a result of the U.N. having submitted the list of enemy prisoners who do not wish to be repatriated to China or North Korea.

25th April.—At the meeting on exchange of prisoners of war, the enemy accused the Allies of planning to hold back some prisoners.

H.M.S. *Concord* was superficially damaged during operations off Korea; preliminary reports stated that she was hit by a shell from an enemy shore battery.

26th April.—The U.N. delegates asked for a plenary session of the full Korean armistice delegation to be held on 27th.

U.S. Sabre jets destroyed two MIGs and damaged one. Fighter-bombers cut railway lines in North-West Korea in many places and attacked gun positions and trenches.

27th April.—The U.N. postponed the plenary session of armistice delegates owing to unavoidable circumstances.

The Air Force reported that during the week eight MIGs had been destroyed, two more probably destroyed, and seven damaged at a cost of one Sabre jet; three more MIGs being destroyed on the ground. Eleven Allied bombers were lost during the week.

28th April.—At the meeting of the full armistice delegation, Vice-Admiral Joy handed to Lieut.-General Nam Il the terms of a compromise solution to outstanding problems in an attempt to break the continuing deadlock in the Korean truce talks. Admiral Joy suggested that discussions on this matter should be in closed session, as he thought that was the most suitable approach, and General Nam Il agreed. The meeting then went into recess to enable the enemy delegates to study the compromise proposals.

29th April.—The enemy, after heavy barrages, attempted to capture Allied advanced positions South-East of Kumsong and North of Kumhwa. Both attacks were repulsed.

30th April.—Enemy probing attacks on Allied positions in the East and East-central sectors were repulsed. U.S. Sabre jets shot down six MIG-15s and damaged four more over North-West Korea.

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[1] A sketch-map of Korea faces page 434.

1st May.—Having studied the U.N. proposal for ending the deadlock in the armistice negotiations, the enemy delegates asked for a full conference on 2nd May.

Allied aircraft flew 1,283 sorties in attacks on enemy positions and transport. The Fifth Air Force reported that 41 MIGs were shot down in April, nine others probably destroyed, and 44 damaged. Allied losses in combat or otherwise totalled 38.

2nd May.—At the full meeting of the armistice delegations the enemy rejected the U.N. overall proposal for breaking the deadlock over repatriation of prisoners, the enemy nomination of Russia as a neutral observer of a truce, and the rebuilding of airfields in North Korea.

Two U.S. destroyers were slightly damaged in a duel with enemy shore batteries in Wonsan harbour. H.M.S. *Glory* left Korean waters for the Mediterranean.

3rd May.—The U.N. and enemy negotiators met again in a secret plenary session which lasted 24 minutes.

4th May.—A further secret plenary conference took place which only lasted 13 minutes. U.S. Sabre jets shot down five MIGs and two propeller-driven fighters. Peking radio continued to propagate stories about U.N. germ warfare activities.

5th May.—At Panmunjom, the meeting of the full truce delegation lasted only a few minutes, and the enemy delegates then asked for another recess. Peking radio propaganda attacks against the U.N. for the alleged dropping of germ bombs in North Korea, alleged that U.S. airmen had recorded " confessions." These an Allied spokesman said could not be accepted, and in Washington the Air Force issued a strong denial of the charge.

6th May.—A large force of U.N. fighter-bombers, with Sabre jets providing cover, bombed a North Korean railway junction and also attacked defended areas 30 miles North of Pyongyang.

7th May.—A statement by General Ridgway in Tokyo made it plain that the real stumbling-block remaining in the Korean armistice negotiations was the question of the return of prisoners of war. The U.N. willingness to drop its ban on airfield reconstruction if the enemy abandoned their nomination of Russia as a neutral supervisor of a truce thus remained in suspense. The Allied offer to return 70,000 enemy prisoners who do not refuse repatriation for 12,000 Allied prisoners whom the Communists claim they hold, and the Allied refusal to return prisoners who flatly refused repatriation, as against the enemy demand that 132,000 out of 167,000 prisoners in Allied hands should be returned has been the cause of the deadlock.

General Mark Clark arrived in Tokyo to take over from General Ridgway who was recently nominated as successor to General Eisenhower in Europe.

Allied aircraft cut railway lines converging on Pyongyang in North Korea in 63 places and also damaged lines on the Haeju peninsula.

8th May.—Generals Ridgway and Mark Clark visited Munsan and conferred with the leading truce negotiators after a profitless plenary meeting at Panmunjom.

U.N. aircraft in the biggest raid of the war, attacked a supply centre 35 miles South of Pyongyang.

9th May.—No event of importance was reported.

10th May.—No progress was made at the plenary session of armistice negotiators at Panmunjom.

11th May.—No progress was made at the Panmunjom meeting. Allied aircraft attacked railways North of Pyongyang.

12th May.—General Ridgway left Tokyo for the United States having handed over to his successor, General Mark Clark.

There was no progress at Panmunjom where General Nam Il charged the Allies with barbarous measures.

13th May.—At the meeting of the truce negotiators General Nam Il reiterated his charges that the U.N. were committing atrocities against prisoners of war, and protested against alleged air attacks on enemy truce convoys.

14th May.—At Panmunjom, General Nam Il again accused the U.N. of ill-treating prisoners, and in support of his charges read excerpts from the concessions made to the prisoners on Koje Island to obtain the release of the U.S. Commandant who was captured and held hostage by these prisoners during a recent incident.

U.N. tanks attacked enemy positions North-West of Kumhwa. Aircraft attacked railways and roads in North Korea, and warships shelled the Wonsan and Songjin areas. Reports indicated that South Korean troops had been involved in more serious fighting during the last 10 days. U.S. battle casualties in Korea to date were reported to be 19,096 killed, 78,805 wounded and 9,720 missing.

15th May.—At Panmunjom, the enemy delegates again indulged in a tirade against the U.N. which the U.N. delegates said was ridiculous and preposterous.

General Mark Clark declared that the agreement made by the late U.S. Commander of Koje prisoner of war camp to effect the release of his predecessor had no validity whatsoever.

16th May.—There was no progress at the meeting of armistice delegates at Panmunjom.

17th and 18th May.—Meetings of delegates at Panmunjom were unproductive. An airborne Regimental Combat team was sent to Koje Island to maintain order, as prisoners there were becoming troublesome.

19th May.—There was no progress at the Panmunjom meeting.

20th May.—No progress at the Panmunjom meeting was reported. U.S. fighters shot down four MIG-15s near the Yalu river.

21st May.—At Panmunjom, the U.N. and enemy delegates continued their arguments regarding prisoners of war. Demonstrations by prisoners at both Koje and Pusan camps were reported to have occurred during the last few days.

The 1st Battalion, The Black Watch, left Southampton for Korea.

22nd May.—No progress was made by the armistice delegates at Panmunjom. Vice-Admiral Joy, the senior delegate of the U.N. Command, handed over to his successor Major-General William K. Harrison. Allied fighter-bombers attacked a big enemy supply centre between Pyongyang and Chinnampo.

23rd May.—After another unproductive meeting at Panmunjom the negotiators adjourned until 27th May. The Chinese put down a heavy barrage North-West of Yonchon during the night 22nd/23rd May. Allied fighter-bombers continued their attack on the enemy supply and factory centre South-West of Pyongyang.

24th and 25th May.—U.S. Sabre jets shot down four MIGs. The Fifth Air Force reported the loss of 12 aircraft during the week, excluding naval air losses, of which there were at least two. A battalion of The King's Shropshire Light Infantry and a Canadian Battalion arrived at Koje Island to assist U.S. troops guarding prisoners.

26th May.—It was reported that the prisoners on Koje Island had built defences within their compounds and that it was unlikely that the trouble would be settled quickly. It was also reported that anti-Communist prisoners had been " executed " by Communist prisoners in the prison camps, wherein the U.N. guards had no control.

27th May.—No event of importance was reported.

28th May.—At Panmunjom, General Nam Il made a veiled threat that the enemy would start a full scale offensive if the Allies did not change their stand on the repatriation of prisoners. The situation on Koje Island was reported to be in hand, though still touchy. The enemy, in driving Allied troops from three hills they had taken near Korangpo, put down his heaviest artillery fire of any single day of the war.

29th May.—At the Panmunjom meeting General Nam Il continued to ask provocative questions about prisoners. After a light attack by the enemy in the eastern sector had been

beaten off, Communist artillery shelled the Allied position with an even greater intensity than on 28th. It was reported from Tokyo that the enemy has now a ground strength in Korea of nearly a million men and at least 400 tanks and 1,800 aircraft. The King's Shropshire Light Infantry took part in dealing with prisoners in Compound No. 66 on Koje Island.

30th May.—Further trouble at Koje resulted in guards having to fire in self-defence and the killing of two to four prisoners. General Nam Il again protested about events at Koje. Major-General Cassels, Commander, British Commonwealth Division, visited Koje.

31st May and 1st June.—No progress was made at the Panmunjom meeting. The Fifth Air Force reported the loss of 45 aircraft in May, including nine shot down in air combat. H.M.S. *Amethyst* covered a shore raid by Allied junks in the Han river. The raiders destroyed enemy buildings and defences and returned with prisoners after facing considerable opposition.

2nd June.—The deadlock at Panmunjom continued. General Mark Clark visited Koje Island and, after his inspection, said that the maximum force necessary would be used to make the 80,000 rebellious prisoners obey orders.

3rd and 4th June.—There was no progress at Panmunjom. On Koje Island, action to enforce order amongst prisoners continued.

The 1st Battalion, The King's (Liverpool) Regiment, sailed from Liverpool for Korea.

5th June.—No event of importance was reported.

6th June.—U.S. Sabre jets shot down seven MIG-15s and damaged two others, while Allied fighter-bombers attacked enemy railways and supply points.

7th June.—At Panmunjom, the U.N. delegates made it clear that they would no longer meet daily with the enemy delegates and that, in the absence of specific proposals from the Communists in writing, there would be no further meeting until 11th June.

8th June.—Allied fighter-bombers destroyed a big enemy supply dump 50 miles South-East of Pyongyang.

9th June.—The commander of the enemy forces in Korea sent a letter to General Mark Clark in which he said that it was imperative that both sides should go all out to settle the problem of repatriation of prisoners of war, the only outstanding issue.

10th June.—As a result of firm military action, in which there were some casualties, prisoners on Koje Island obeyed orders when sub-divided into new compounds.

Field-Marshal Lord Alexander, Minister of Defence, arrived in Tokyo *en route* to Korea.

11th June.—There was no progress at the resumed truce talks at Panmunjom. General Mark Clark in his reply to the enemy commander in Korea said that the U.N. delegation would continue to meet the Communists at all times when their delegation gave positive indications that there was hope of making progress towards the achievement of an honourable armistice; he added that there was no understanding to require daily plenary meetings.

12th June.—U.N. fighter-bombers joined artillery and tanks in attacks on Chinese forces which were endeavouring to regain two hills near Chorwon.

13th June.—Field-Marshal Lord Alexander, with General Mark Clark, flew from Tokyo to Seoul where he visited Eighth Army headquarters and inspected 77th Fighter Squadron, R.A.A.F. The U.S. 45th Division repelled further Chinese attacks against the hill positions West of Chorwon and South-East of Kumsong and gained new ground, causing heavy casualties amongst the enemy. There was no progress at Panmunjom.

The Air Ministry announced that more R.A.F. pilots would be posted for service in Korea with the object of creating a nucleus with first-hand experience of combat against the types of fighter aircraft being used by the Communists.

14th and 15th June.—Field-Marshal Lord Alexander toured the front, spending some time with the 1st Commonwealth Division, and visited ships of the Royal Navy at Inchon. He also visited troops of the 45th U.S. and 1st Republic of Korea Divisions.

Chinese attacks West of Chorwon were repelled after heavy fighting. U.S. Sabre jets shot down six MIGs and one Yak. Allied bombers attacked an airfield near Pyongyang. There was a fruitless meeting of truce delegates at Panmunjom. On Koje Island, further steps were taken to bring prisoners under control.

16th June.—Field-Marshal Lord Alexander visited Koje Island and, on his return to Pusan, had an interview with President Syngman Rhee.

17th June.—At Panmunjom, after a short profitless meeting, General Harrison, the senior U.N. delegate, said that the U.N. would recess unilaterally until 21st June. Chinese attacks West of Chorwon, supported by a heavy artillery barrage, were repulsed with considerable losses to the enemy.

18th June.—Field-Marshal Lord Alexander, who had returned to Tokyo from Korea, left by air for Canada.

19th June.—No event of importance was reported.

20th June.—The Chinese resumed their attacks near Chorwon. U.S. Sabre jets destroyed two enemy propeller-type aircraft. On Koje Island, the main movement of prisoners into smaller stockades was completed.

21st June.—At Panmunjom, Major-General Harrison quoted an official Russian publication to show that the Soviet Union had, during the last war, twice offered to return German troops, if they surrendered, to any country of their desire.

22nd June.—The Panmunjom meeting lasted only 20 minutes. Two attacks were made by U.N. troops North-West of Chorwon. One withdrew, but the other held the hill which had been its objective. U.S. Sabre jets shot down two MIG-15s and damaged another. Warships shelled enemy positions from the upper reaches of the Haeju River and, further North, bombarded coastal gun positions.

23rd June.—Some 500 U.N. aircraft attacked hydro-electric plants on the Korean side of the Yalu river. The principal installation attacked was at Suiho. No interference by enemy aircraft occurred, although many were seen on the ground North of the river.

At Panmunjom, the enemy delegation put forward strong objections to the Allied recent decision to release 27,000 Korean civilian internees.

24th June.—Allied aircraft attacked eight hydro-electric plants in North Korea, including four of the five attacked on 23rd, and completed the destruction of these four.

At Panmunjom, General Nam Il complained of continued screening of prisoners on Koje Island.

25th June.—At Panmunjom, General Nam Il accused the U.N. of trying to extend the war, and said that no provocative action taken outside the conference would alter the reasonable and unshakeable position of his side.

Superfortresses dropped 250 tons of bombs on enemy front line trenches. Communist guerillas dynamited a train behind the U.N. lines in South-West Korea, killing 46 persons, and carried away 80 others.

26th June.—The 1st Battalion, The Royal Fusiliers (City of London Regiment), sailed from Liverpool for Korea.

27th June.—Allied fighter-bombers again attacked hydro-electric plants in North Korea, near Changjin reservoir, and high-voltage installations North and North-West of Hamhung and Hungnam.

At Panmunjom, Major-General Harrison broke off truce talks and declared a three-day adjournment.

CHINA
MANCHURIA
CHONGJIN
HYESANJIN
MANPOJIN
SONGJIN
CHOSAN
KANGGYE
CHANGJIN
RESERVOIR
FUSEN DAM
TANGCHON
YALU R
CHOSNIN DAM
HAGARU
HAKALWOO
IWON
SUIHO DAM
SAKCHU
KOTORI
SINUIJU
UNSAN
HUICHON
CHONGCHON R
NAMHUNG
SINPO
TAECHON
TOKCHON
TAEDONG R
HUNGNAM
PAKCHON
KUNU
SEA
OF
JAPAN
CHONGJU
ANJU
SINANJU
YONGHUNG
NAPU SOHU ISLAND
JUWAN
WONSAN
PYONGYANG
TONGCHON
CHINNAMPO
SUAN
KOKSAN
CHANGJON
KOSONG
SARIWON
PYONGGANG
KUMSONG
KANSONG
CHODA ISLAND
YESONG R
IMJIN R
KUMHWA
GHANGYON
NANCHONJON
CHORWON
KHOPPEKI POINT
HWANGHAI
KUMCHON
YONCHON
KWAGHON
YANGGU
INJE
YANGYANG
SONGHYON
KAESONG
38 N
KOHANGPO
KAPYONG
CHUNCHON
HANGYE
KANGHUNG
PAKHWAJOM
MUNSAN
UIJONGBU
HONGCHON
KIMPO
SEOUL
YONGDU
CHONGSON
SAMCHOK
YONGDUNGPO
HOENGSONG
PYONGCHANG
INCHON
ANYANG
CHIPYONG
WONJU
SUWON
YOJU
TOKCHOK ISLAND
IGHON
CHECHON
YONGWOL
KUMYANGJANG
HAN R
SOSAN
PYONGTEEK
ANSONG
CHUNGJU
TANYANG
CHONAN
YECHON
YONGJU
CLIFFORD ISLAND
GHONUI
CHONGJU
ANDONG
CHOCHIWON
HAMCHANG
YONGBOK
POUN
KONGJU
SANGJU
UISONG
NAKTONG R
TAEJON
YONGDONG
GHANGSA
KUM R
NONSAN
SONSAN
HUNGHAE
UINUNG
KIAYE
KANGGYONG
KUMCHON
YONGCHON
ANGANG
POHANG
YELLOW
SEA
KUNSAN
WAEGWAN
TAEGU
SONGJU
KYONGJU
CHONJU
HYONPUNG
IMSIL
HYOPCHON
CHANGNYONG
NAMWON
TANYANG
NAM R
CHINJU
MASAN
PUSAN
KWANGJU
HADONG
HAMAN
SUNGHON
KOJE ISLAND
MOKPO
YOSU
SCALE OF MILES
20 10 0 20 40 60

28th and 29th June.—In the western sector, a Chinese force in battalion strength, supported by tanks, was almost completely destroyed when attempting to capture a hill position. A smaller force attacked a hill further to the East and was repulsed. B26 bombers bombed front-line positions, and Superfortresses bombed the marshalling yard at Chinnampo.

30th June.—Heavy rain curtailed even patrol activities between the lines, but B29s bombed railways in North-West Korea.

1st July.—The Panmunjom meetings were resumed without result. Ground and air operations were restricted by rain, except in the eastern sector where an attack by a battalion of North Koreans was repulsed, and North-West of Yonchon where a strong Allied raiding force inflicted heavy casualties on Chinese defending a hill position.

2nd July.—Truce talks were postponed until 3rd July by the enemy delegates. Heavy enemy shelling occurred in the Chorwon area. A U.N. force raided a hill North of Korangpo. B26 bombers attacked enemy front-line positions.

3rd July.—At Panmunjom, the enemy delegates put forward a new plan to end the deadlock over prisoners of war. They asked that their proposals should be discussed at secret sessions. North-West of Yonchon, Allied troops reoccupied outpost positions from which they had been driven during the night.

4th July.—U.S. Sabre jets destroyed 12, possibly 13, and damaged six other MIG-15s which attempted to prevent an Allied raid on a school for enemy officer candidates near Sakchu. The raid was reported to have caused great fires. No Allied aircraft were lost in this action or during the week.

The truce delegates met in secret session, but the U.N. delegation insisted on the right to reveal any developments.

5th and 6th July.—Secret sessions of the truce delegates continued. Warships bombarded the Wonsan area for seven hours.

7th July.—Talks at Panmunjom continued. Allied troops supported by tanks and flame throwers, attempted, without success, to dislodge the enemy from three hills within two miles of Panmunjom. The first contingent of U.S. jet fighter reinforcements to fly direct from America to Japan landed at Honolulu, having been refuelled in the air *en route*.

8th July.—The truce negotiators met again in closed session. Allied troops attempted to take a hill in the eastern sector but were forced to withdraw. An enemy attack in the Kumsong area was repulsed. U.N. aircraft attacked a hydro-electric plant at Changjin.

9th July.—The truce delegates held another closed session. Chinese troops recaptured a hill in the Kumsong area.

10th July.—Another closed session took place at Panmunjom.

11th July.—Several hundred Allied aircraft attacked military targets at Pyongyang and two railway centres South of the capital. The truce negotiators met at Panmunjom.

12th and 13th July.—Meetings at Panmunjom were without any disclosed result. There was bitter fighting for possession of a hill in the eastern sector. U.S. aircraft attacked radar stations near Haeju. The Far East Air Force announced on 12th July that the Allies had lost 719 aircraft in the Korean War, against 524 lost by the enemy. All the enemy losses were in combat, but 548 of the Allied aircraft were due to ground fire. A U.S. destroyer was hit four times during a duel with shore batteries on the East Coast.

14th July.—At Panmunjom, the enemy representatives asked for a two-day recess in the negotiations. An enemy charge that Allied aircraft bombed a prisoner-of war camp near Pyongyang on 11th July was formally denied.

15th July.—U.N. aircraft attacked targets in the Pyongyang area and in the West of North Korea.

THE INTERNATIONAL SITUATION[1]

By A. K. Chesterton, M.C.

EUROPEAN DEFENCE COMMUNITY

AMONG the events of the last three months which may be described as being at least theoretically important is the agreement by six nations to establish a European Defence Community. The word " theoretically " is necessary, because of the yawning abyss between governmental proposals and final ratification by the various national assemblies. This chasm, moreover, is unlikely to be bridged by M. Schuman's latest move to bring about a Western European Federation through direct election to what would then be, in effect, a Parliament of Europe. It is conceivable, though by no means certain, that the Benelux countries would surrender their sovereignty to such a body, but France, Western Germany and even Italy, however compliant their governments, would find abrogation of their sovereign powers a sacrifice which neither head nor heart could willingly endorse.

Even were the Federal Parliament to be established, the strains to which it would be subjected, including the ceaseless agitation by members for its disestablishment every time their interests were threatened, would make it an instrument more of pandemonium than of co-operation and harmony. One immediate result would be the replacement of the Right-Left divisions in each of the member states by an even more virulent warfare between federalists and nationalists. Europe, so far from being strengthened, would be immeasurably weakened.

Towards a Federal Bureaucracy

Should M. Schuman not succeed in creating a directly elected assembly, a compromise will no doubt be attempted on the lines of the so-called Eden Plan. The British Foreign Secretary has proposed that the institutions of the existing Council of Europe should discharge the governmental and parliamentary functions of the European Defence Community, the coal and steel pool to which M. Schuman's name has been given, and a host of other functional agencies which are doubtless waiting to be born.

Mr. Eden's idea, apparently, is that the Council and its constituent bodies should work in an advisory capacity on their present 15-member basis, but in a legislative and executive capacity when serving as the instruments of the six-member Defence Community and Schuman Plan Authority. What seems to be contemplated—although this is not avowed—is the establishment of a federal bureaucracy on which to build an ultimate political federation, consisting of all fifteen members of the Council of Europe.

The Eden Plan provides for the Council of Europe and the special communities to share the same secretariat and to use the same buildings, it being the Foreign Secretary's belief that by this means close co-operation between all Western European countries may best be maintained. How such an arrangement will work out in practice—if it ever gets beyond the blue-print stage—remains to be seen, but as a theoretical proposition some critics have held the scheme to be untidy. Confusion, they say, will need only to become a little more confounded for the European nations to bid a long farewell to Strasbourg and return to a system of simple alliances. It is, after all, between nations that the fundamental cleavages exist. Eden Plans

[1] As deduced from reports up to 25th July.

and Schuman Plans are powerless to disguise those cleavages. No form of federation, for instance, can resolve the potentially explosive problem of the Saar. The French Foreign Minister's proposal for a directly elected assembly ignores the fact that the elected persons would include French and German politicians, whose continuance in popular favour could scarcely be secured at the expense of French or German sentiment.

New German Alliance

The guarantees given to the Defence Community by Great Britain and the United States have had the effect of bringing these countries into a treaty relationship with Western Germany which amounts to an alliance. This is one of the most constructive happenings of the post-war period. Nations cannot for ever nurse the memories of old antagonisms, especially when new dangers threaten. The first half of this Century has been made hideous by the raging intensity of the German wars: there will be little hope for the second half unless the Germans are encouraged to work in harmony with the rest of the Western world. That there should be a residue of bitterness in the West, especially in France, is natural, but it is an ill-service to mankind that helps to keep the feud alive.

Unfortunately, party political expediency is often divorced from the realities of a given political or military situation. Although Germany is no longer an occupied territory in the official documents, there is no disputing that the troops of the other Powers are on her soil, and likely to remain there for a very long time. The Saar has passed once again under French control. Sovereignty over the industrial resources of the Ruhr is now invested, or about to be invested, in the Schuman Plan Authority. There is thus no possibility that Germany can re-emerge, within the foreseeable future, as a military Power strong enough to menace her new Allies. Yet this is precisely the fear which dictates reservations such as those made by the British Labour Party. Emotional hang-overs from the turbulent past are the worst possible ingredients for a clear-headed policy in the present. If there were grounds for such fear, there would be less reason to complain of this rather neurotic attitude, but as there are palpably no such grounds, the duty of the commentator is to point out that obstacles placed in the way of a *rapprochement* with Germany are the equivalent of the gift of entire armies to the Soviet Union.

MEDITERRANEAN COMMAND

Although Mr. Churchill has given emphatic expression to his view about a Mediterranean Command, recent developments suggest that the British claim has been adroitly short-circuited. It was obvious that such a Command, to be effective, would need to include the land-forces of Turkey and Greece. By integrating their military strength in N.A.T.O., the supreme direction has ensured that there shall be virtually nothing left to command. Admiral Carney's fleets having been specially assigned to the task of guarding the southern flank of the Western armies, it is improbable that American naval units, other than token forces, would be made available for service in a distinctive Mediterranean Command, while the further tying-up under Admiral Carney of what is now to be an American military command in South-East Europe—to match the Italian military command—has made even the idea of a Mediterranean Command slightly absurd.

What has to be particularly avoided at the present time is the foisting upon Britain of a sort of residual command, consisting—apart from her own contributions—of a few assorted naval units, perhaps including the Greek and Turkish fleets, and

land forces from the Arab world. Such a set-up might look imposing on paper, but it could pack no real punch and would give the sponsoring Power many headaches, not least that of coping with the continuing tensions between the Arabs and their new Israeli neighbour. Such a task would carry no prestige, and no possible advantage could accrue to Britain from its acceptance. The weaving of the Turkish and Greek armies into the N.A.T.O. fabric, indeed, makes it a task impossible to discharge in any way compatible with national dignity.

There is for Britain no way round this *fait accompli*. All that she can do, as far as the Mediterranean is concerned, is to adopt a free-lance role, refusing to allow her own forces in the area to be "integrated," and devoting herself to her own special interests there. If at the same time she can lever herself into a position of greater freedom in the rest of the world—above all, if she can, without weakening the alliance, loosen some of the less necessary constraints of N.A.T.O.—it will not be long before her Allies begin to pay more deference to her point of view and forgo the new habit of challenging her historic claims. The basis of such independence is economic. Should the Commonwealth and Empire achieve a much greater measure of self-sufficiency, and should there be a dispersal over these Imperial lands of an adequate supply of atom-bombs, the British nations will again become Allies whose goodwill is well worth cultivating.

KOREA

There has been a great deal of fuss, not all of it intelligent, or disinterested, about the bombing by the United Nations air forces of enemy industrial plant in Korea. As the Yalu River has acquired a rather ominous political significance, it is impossible not to sympathize with the view of Mr. Churchill and Mr. Eden that Great Britain might well have been consulted before the raids were carried out. Mr. Acheson has explained that somebody who should have apprised the British Government of the project failed to do so. Should not the communication, however, have taken place on the Secretary of State–Foreign Minister level? Again, one does not feel altogether happy that General Mark Clark could say nothing to Field-Marshal Lord Alexander of what was planned because he himself did not know at the time. The co-ordination of an operation which raised such important political issues seems to have been a little haphazard.

When all this has been said, however, there remains the fact that the power plants and other industrial concerns in North Korea were entirely legitimate military targets. While the talks at Panmunjom have been dragging out their weary course, the Chinese Command has taken full advantage of the respite to build up its forces in a big way. To suggest that nothing should be allowed to interfere with the process is to preach a most peculiar doctrine. It is clear that the United Nations build-up has not been commensurate with that of the Communists, which is an additional reason why there should be no undue coyness about making the maximum use of air-power within the prescribed theatre of war.

Does Mao want Peace?

Press commentators have never tired of finding "hopeful signs" that the Chinese leadership is genuinely anxious to effect a settlement in Korea. This, no doubt, is true—provided that every substantial Communist claim is met! Men seeking peace do not spend over a year discussing the terms on which they are prepared to talk about it. The only possible inference to be drawn from the protracted haggling is that, in present circumstances, Mao Tse-tung wishes neither to

fight nor to make peace, but merely to talk about the possibility of peace, while the war is kept ticking over. Judged from the standpoint of grand Communist strategy, the tactics are obvious and even inevitable. The Western Powers, using exterior lines, are being compelled to expend considerable effort on battlefields far from any vital area, and to that extent are weakened everywhere else along the periphery of the East–West contact zones.

Apart from the extremely important question of prestige, the United Nations can have only one objective in Korea, and that is to withdraw at the earliest possible moment. There would seem to be one certain way to achieve this withdrawal without damage to prestige, and that is by securing, without heavy losses, the rout of Mao Tse-tung's forces and their pursuit as far as the Manchurian border. It might then be possible, for a time at least, for the Koreans to resume responsibility for their own problem. Whatever view is held of General MacArthur's handling of the situation, it is difficult to controvert his axiom that there is no substitute for victory.

INDO-CHINA

The same feelings of frustration, deriving from a consciousness of stalemate, are apparent in Indo-China, and especially in France, where the never-ending demands of the conflict have led to much discouragement. General Collins, the United States Army Chief of Staff, recently visited the theatre, and on his departure affirmed that, although the death of Marshal de Lattre de Tassigny had caused him much concern, the French had subsequently continued to " do very well." In a tactical sense this is undeniable, but it cannot be said that the hope aroused by the Marshal's swift transformation of the situation has been maintained.

Although American equipment is now arriving in large quantities, there is a miasma of pessimism hovering over the entire scene, mainly caused by the failure of the French on the spot—as well as in France—to see any end to the business. The overall French need is to withdraw personnel rather than to send reinforcements, which means that the future largely lies with the Viet-Nam troops now being raised and trained. It would be misleading to assert that the French authorities place any great faith in the military efficacy of these levies, or even in their political zeal. In the East above all places nothing succeeds like success, but tactical success is not enough. Here again, there is no substitute for victory. Victory for the Communists in the present phase of the world situation, however, consists—in these distant fields—of keeping every possible sore open, and this they will continue to do until some means is found of blanketing them.

EGYPT

The Times diplomatic correspondent has affirmed that the military *coup* in Egypt has had no connection with the Anglo-Egyptian dispute. That may be the correct view, but it is perhaps significant that the insurrectionary leadership asked the American Ambassador to warn the British that any intervention would be met by force. There was, naturally, no question of any such interference, but why should the new Egyptian régime have supposed that there might be, if nothing had occurred of relevance to the dispute. It would be unrealistic not to bear in mind that during the troubles in Suez the British forces and Egyptian Army under its now dispossessed commanders worked in complete harmony.

Mr. Acheson has denied the report that the State Department has " pressed " the United Kingdom to recognize the title King of Egypt and the Sudan. It may

be that "suggested" is a more accurate word than "pressed." There can be no doubt that this suggestion has been made, not only to the British Government, but to the Sudanese leaders, who have been asked to accept the fact that the King's title would in no way affect any existing reality or impede the road to self-determination. If the matter is of so little significance, why is there such insistence on it?

Even more important than the State Department's attitude, perhaps, is the decision of the International Bank to withhold the £E200,000,000 earmarked for Nile River developments until the political situation has been clarified. This has proved a great incentive to the Egyptians to reach an understanding with the Sudanese, and there has been much coming and going between Cairo and Khartoum. What those who propose to finance the large-scale riverine projects seek is undoubtedly unified control of the whole area, if not within a political federation, then under some such functional agency as the Nile River Authority. The independence parties in the Sudan will certainly reject any approach for a federation, but—as the carrying out of the Schuman Plan has proved—national feelings are much more easily appeased when the declared objective is limited to the pooling of sovereignty only for specific purposes.

CORRESPONDENCE

(Correspondence is invited on subjects which have been dealt with in the JOURNAL *or which are of general interest to the Services. Correspondents are requested to put their views as concisely as possible, but publication of letters will be dependent on the space available in each number of the* JOURNAL.—EDITOR.)

ELIZABETHAN ENGLAND

To the Editor of the R.U.S.I. JOURNAL.

SIR,—Our Institution claims to exist " for the promotion and advancement of the Science and Literature of the three Services." It was therefore disappointing to find nearly half a page (p. 675) of the November, 1951, issue devoted to painting a picture, however deft, of " a miniature industrial revolution." Sheepwalks, peasant-supporting arable, the bedevilling of " all but the well-to-do," the resourcelessness of the "choice spirits of the Society of Antiquaries . . . in learned session," the printing press, the blast furnace, glass making and the adaptation of the Dutch loom are paraded before us because " they all form part of the composite picture which was Elizabethan England." I am quoting from the notice of Tenison's Volume IX (1592-1596) in which the reviewer complains " Many of these aspects of his period Mr. Tenison elects to ignore." There are plenty of books pouring out about the social, economic, and parish-pump aspects of English history, but the title of Mr. Tenison's work is not *Elizabethan England*, as at the head of the review, but *Elizabethan England, being the History of this Country " In Relation to all Foreign Princes."*

This period, in which the Royal Navy and the armed forces of the Crown so largely took shape, has been much muddied over by literary civilians and landsmen ; for small books purporting to depict the Elizabethan period are lapped up. Mr. Tenison, with rare self-effacement allows the men of action on both sides in his political, naval, and military History to speak for themselves, and he does them tardy justice by reproducing their commissions shewing what they set out to do, instead of conforming to the fashion of echoing reproaches that they did not do what they were never meant to do.

I am myself the fortunate possessor of a set of Tenison's remarkable work. One of its features is that it is the only work to do justice to the Services, and is the only work which sets the Science and Literature of the Services at that period in their historical setting. Since our Institution is fortunate enough to have secured a set, I would have preferred to see our JOURNAL welcome it for what it is, rather than to lead off with half a page deploring what, thank goodness, it is not.

M. SCOTT

8th January, 1952. (*M.A. (Hist.), B.D., late Coldstream Guards*).

SIR,—I have only just seen the November Journal, but perhaps you will allow me, even at this late date, to comment on your review of Volume IX of Mr. E. M. Tenison's *Elizabethan England*.

Your reviewer devotes his first three paragraphs to an interesting statement of his own views on the general condition of the English people in Elizabeth's reign. It is a pity that he goes on to say that Mr. Tenison " elects to ignore many of the aspects of the period, although they all form part of the composite picture." This makes it clear that he has not read the full title of the book, which is *Elizabethan England, being the History of this Country " In Relation to all Foreign Princes."* In other words, it is expressly concerned with foreign affairs. A book should surely be reviewed for what it purports to be and not for what the reviewer considers it ought to be.

In his fifth paragraph your reviewer writes of Essex as " that dangerous military phenomenon—the gifted amateur " and damns him as a general. This has long been the accepted view, but research shows that its validity is at least doubtful. Your reviewer

misses the whole point of Mr. Tenison's immense work, which is that he never echoes the opinions of others but marshals and presents history from the documents of the time. If in the process a new aspect emerges, whether of a man or of an event, the conscientious reviewer should at least consider it on its merits.

In his last paragraph your reviewer castigates Mr. Tenison for lack of generosity to fellow historians working in the same field. Should he not expose their errors? To my mind this is as much as to ask a historian to condone what his researches show him to be wrong. And, in point of fact, are there any historians working in the same field, in the sense that they present the history of that age from contemporary documents? Far too much history is written without real research. Historical figures are elevated or damned on no better authority than the work of a previous author, himself nearer to our time than the period he describes. A readable rehash of other men's work is what we are usually offered, and for the serious student it isn't good enough. Mr. Tenison's history is not a popular history but a work of original research, at great pains and over many years. As much of his chosen period is of special interest to service readers, it is sad that his last volume should not have had a more understanding notice in the JOURNAL.

ALAN HILLGARTH,
Captain R.N. (retired.)

21st June, 1952.

SIR,—As it seems to me, this is a question of adhesion or otherwise to the scope of a work as indicated by its title.

Had the author abode by the limitations implied by his " . . . *In Relation To Foreign Princes,*" we should have been deprived of the entirely fascinating account of the Richard Hawkins—Margaret Hawkins relationship, and the details of the Perrot and other conspiracies. But this departure into matter not directly related to " Foreign Princes " only serves to whet the appetite; as it inevitably draws attention to the neglect of many other equally cogent aspects of the domestic scene, to some of which I ventured to draw attention.

No one could be more appreciative than myself of the fruits of Mr. Tenison's herculean labours. But their unquestioned value has the effect of arousing the demand that they should be widened to include more of the domestic Elizabethan scene, of which, so far, he has given us no more than tantalising glimpses. Minor criticisms apart, that was the basis of my review.

YOUR REVIEWER.

4th July, 1952.

A NEW DEFINITION OF WAR AND ITS APPLICATION TO AIR POWER

SIR,—In the prolegomena to his most able and interesting article, *A New Definition of War and Its Application to Air Power*,[1] Captain S. Vines, R.A., refers to my earlier contribution, *War—Amateur or Professional?* in terms as kindly as, I fear, they are ill deserved.

In most particulars, it would seem, our respective minds march in step. It is with my, admittedly contentious, affirmation that " in the next war the first battle will be the last and the last the first " that Captain Vines finds himself unable to agree.

Attempts at concision invariably end, alas, in disastrous over-simplification. Here is a case in point. For obviously no one—other than the compiler of *Old Moore's Almanac*—would dare to be didactic about events that still lie in the future. Obviously, my submission would have been better phrased had I written that, in any future conflict *our fixed aim and priority purpose* must be to ensure that the first battle is the last and the last battle the first. For total war has got so damnably out of hand that were any future conflict permitted to get the bit between its teeth, with the ever-accumulating apparatus of slaughter it would have at its disposal, a holocaust, followed by a headlong plunge into another Dark Age, would almost inevitably be the outcome.

[1] See JOURNAL for May, 1952, page249.

Agreed that the aim of our common enemy—as clearly set forth in the writings of both Lenin and Stalin—is not so much the annihilation of the West as its complete engulfment. But to the victim it signifies little whether he be killed by a single stroke from the lion's paw or gnawed slowly to death by a thousand rats.

When all those nations of the West that imbibed their principles of civilization during their early attendance at the ' public school ' of Rome, do eventually face up to the grim task of subduing the hordes of barbarism, the only thing for them to aim at is a shattering, pulverizing blow delivered at the very outset. That such a blow can be dealt the record of the Austro-Prussian War of 1866 and the campaign in Poland in 1939 bears sufficient witness. The answer to horde attack is, and always must be, overwhelming fire-power, derived from better and more numerous weapons, more professionally handled. With the industrial resources at the disposal of the West, a preponderant concentration of fire-power should not be impossible to achieve. In the event, it should not be beyond the bounds of Western resource to ensure what can best be described as a European Ulundi.

If one could deal with the menace of Muscovite imperialism swiftly and decisively, then thereafter, perhaps, we could get back to the concept of deliberately ' delimiting ' warfare, keeping it rigidly ' professional,' rather than permitting it to continue the costly, indeterminate, uncontrollable ' free-for-all ' it has been allowed to degenerate into in the more recent past. But with regard to the governing proviso, I am the first to agree with *Touchstone* that " there is much virtue in your ' if '."

REGINALD HARGREAVES,
9th June, 1952. *Major (Retired.)*

SIR,—I was astonished to read some of the statements of Captain Vines, R.A., in his article on Air Power. He says " there is some evidence that the bombing of British cities by the Germans in the last war was partly carried out in reprisal for British raids on German cities." Anyone who knew nothing of the history of 1939 and 1940 would believe that it was *we* who started the bombings of cities and not the Germans. Has Captain Vines forgotten the bombing of the Polish cities in the first week of the war in 1939, and the bombing of Rotterdam and other Dutch cities in May, 1940 ?

As to the cost of the bombing campaign and its results, has Captain Vines overlooked the enormous drain on German manpower and resources caused by the need of defence against our bombers ? The vast expenditure of resources and skilled manpower on the searchlight installations, the A.A. batteries, and the air raid shelters cannot properly be omitted from the calculation.

Incidentally, Nelson never " bombarded Copenhagen in 1801." He destroyed the Danish fleet and floating defences and had no need to bombard the city. That in fact was done in 1807, two years after Nelson's death.

So far from being a " ruthless assault on a small neutral," the Baltic expedition of 1801 was a perfectly proper precaution against a naval combination of Russia, Sweden, and Denmark which was a very grave threat against this Country, and it was only the operations of the British fleet in the Baltic that saved us from a very serious danger at a time when Napoleonic strategy was working for our destruction.
15th June, 1952. IAN MACALISTER.

SIR,—Sir Ian MacAlister has missed the whole point of my article. The Germans were, of course, ruthless in the bombing of cities when this had a *tactical* object. This was the case in the bombings of Warsaw, Rotterdam, and Belgrade. What they did not subscribe to was the *strategic* bombing of cities, which the Anglo-Saxon nations carried out to the very limit.

The evidence to which I referred was :—(a) In 1935, Hitler offered a pact to limit bombing to the fighting zones. This we refused. (b) In September, 1940, Hitler threatened

to bomb London if we did not cease our attacks on Berlin (these were being made by small numbers of Hampdens). (c) Hitler's orders for Sea Lion (the invasion of this Country) stated " Terror attacks will be reserved as reprisals."

The German A.A. and P.A.D. effort was certainly a by-product of the bombing campaign but it cannot be called an " enormous drain." This expression is properly fitted to the German efforts on the Russian front.

I do not propose to enter into controversy on Nelson's operations at Copenhagen. I stand by my original statement that it was a ruthless assault on a small neutral and am content to be judged by the account in *The Cambridge Modern History*, Volume IX.

S. VINES.
Major, R.A.

3rd July, 1952.

THE ARMY AS A CAREER FOR GRADUATES

SIR,—Lieut.-Colonel Evans, in his article *The Army as a Career for Graduates* in your May issue,[2] draws attention to the opportunities offered to both men and women. Unfortunately he omits to give the particulars of the conditions of service and prospects for women when they differ from those of the men. In general they are the same up to and including the rank of lieut.-colonel except that the pay is three-quarters of that of the men. Allowances are the same as for the men. Except for nursing officers all other women officers are commissioned in the Women's Royal Army Corps and they may be employed on the staff or in command of troops. A certain number of suitably qualified women may be commissioned for permanent duty with the Royal Engineers, Royal Signals, Royal Army Service Corps, Royal Army Ordnance Corps, Royal Electrical and Mechanical Engineers, and Royal Army Educational Corps. Retiring ages are 47 for a major and 50 for a lieut.-colonel. At present there are five colonels and one brigadier in the W.R.A.C.

Retired pay and other non-effective benefits are two-thirds of those of the men.

Women officers are selected in the same way as men, but their normal training period is shorter, only five weeks in the ranks and nine months as an officer cadet. In all other respects the article is as true of women graduates as it is for men.

JULIA M. COWPER,
Colonel, W.R.A.C.

13th June, 1952.

SIR,—Colonel Evans's article *The Army as a Career for Graduates* in the May JOURNAL may unwittingly give the impression that degree courses at the Military College of Science are restricted to officers from technical arms. This is not so and there are in fact a number of gunner, cavalry, and infantry officers reading for degrees at the moment.

Colonel Evans suggests a " Royal Army " divided into leaders, technicians, and administrators as a solution to the problem of providing the technical ability which we undoubtedly need. This seems to me a policy of despair. Degree courses for officers from non-technical arms are extremely valuable in ensuring that there is no unbridgeable gulf between the leaders and technicians and thus allow the Army to remain an integrated service with all its advantages in efficiency and morale. It is unfortunate that the number of officers from these arms reading for degrees is so small. One can only hope that a spreading awareness of the technical problem will encourage more officers to come forward.

E. R. A. SEWELL,
Major.

18th June, 1952.

SIR,—Colonel Cowper's letter completes the picture as far as women entrants into the Army are concerned and I am grateful to her. Major Sewell's letter rightly corrects a point of detail. The paragraph about a " Royal Army " was put forward more to arrest attention to the need for a *variety* in leaders in modern war and that we should be wrong in thinking there is only one kind.

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[2] May, 1952, page 230.

It is difficult in a comprehensive article not to miss some aspects of the subject. Our correspondents have helped to remedy the defects in mine.

FREDERIC EVANS,
Lieut.-Colonel.

3rd July, 1952.

THE STORY OF THE ROYAL WEST AFRICAN FRONTIER FORCE

SIR,—Brigadier Clarke's article, *The Story of the Royal West African Frontier Force*,[3] is welcome and valuable, but is incomplete or inaccurate in certain matters. The reason may be brevity or, more probably, the difficulty of writing a balanced account of a Force, derived from four widely separated colonies, which has few opportunities to work as a whole. Some comments occurring to one who served with the Sierra Leone Regiment for most of the war, may therefore be of interest.

The Nigeria and Gold Coast elements, being far larger than those of Sierra Leone and the Gambia, are rightly given most consideration. Nevertheless, Sierra Leone is an older colony, and the Sierra Leone Regiment can trace a history back to 1829, when the Sierra Leone Police was raised. This force had the usual eventful history of such forces until, in 1890, the Sierra Leone Frontier Police was formed as an offshoot. The S.L.F.P. itself was re-formed as a military unit in 1902, becoming the Sierra Leone Battalion W.A.F.F.; in those ten years it had suppressed an important rising in 1898, and provided the Ashanti War contingent in 1900. In the advance on Kumasi, the S.L.F.P. were used continuously as scouts, as (so it is reported) their tactics were superior to those of the other contingents. Since much more of Sierra Leone than of the two larger colonies lies within the coastal forest belt, it may be supposed that their training at that time gave greater emphasis to work in this type of country.

Brigadier Clarke mentions battle honours "granted to the W.A.F.F." Honours have been granted to the separate Regiments, and they vary: the Sierra Leone Regiment cannot boast as many as Nigeria or the Gold Coast, for it is smaller, and in major wars the defence of Freetown has made it difficult to spare troops for elsewhere. However, during the 1939-45 War, the Sierra Leone Battalion was triplicated and restyled the Sierra Leone Regiment; the Gambia Company became a Battalion. A new development appeared in the R.W.A.F.F.—Corps not carrying the name of a colony in their styles, e.g. the West African Army Service Corps. They made the 81st West African Division possible, the first standard formation produced by the R.W.A.F.F. with complete units from each of the four colonies. Its formation marked a great step forward, both militarily and politically. But surely it was the cessation of the threat from French Africa, not the return of troops from East Africa, that enabled the R.W.A.F.F. to send this division and the 82nd to Burma?

Two final items. (i) Though no history of the R.W.A.F.F. has ever been written, a little-known one of the Sierra Leone Battalion was published in 1932; there may be other such histories of the forces raised in the other colonies, I do not know. (ii) At "staff parade," i.e. tattoo, it was the custom, peculiar to Sierra Leone, to sing the National Anthem and recite the Lord's Prayer. Neither could easily be recognized, unless one knew beforehand what they were! This custom was started in 1892, and I hope it still continues; staff parade of a battalion in the dark, each man with his hurricane lamp, was impressive.

I fully agree with Brigadier Clarke's conclusion, but would go further; leadership is supremely important, more so even than at home. Many people were surprised at the courage and ability of soldiers recruited from pagan forest-dwelling tribes which had been considered to be inferior. I suspect that we had been overmuch biased against these tribes, for the history of tribal wars contains examples of both courage and skill. Many of these men made excellent soldiers, but, as with the northerners, it was good leadership that developed their latent qualities.

M. D. W. ELPHINSTONE,
Major, T.A.R.O.

24th July, 1952.

[3] See JOURNAL for May, 1952, page 223.

GENERAL SERVICE NOTES

UNITED NATIONS

Nomination of Panel of Military Expert Advisers

On 15th April, the United Nations Collective Measures Committee, meeting in New York, nominated a panel of military experts, drawn from eight different countries, to advise United Nations member-countries on methods of training, organizing, and equipping national forces which would be earmarked for service under the United Nations in resisting aggression. This panel consists of 20 navy, army, and air force officers from Great Britain, Canada, France, Greece, the Netherlands, Siam, Turkey and the United States. Vice-Admiral C. Caslon, Major-General L. O. Lyne, and Air Vice-Marshal Sir Alexander Davidson were nominated as the representatives from Great Britain, while Major-General R. Morton was nominated as the representative from Canada.

NORTH ATLANTIC TREATY ORGANIZATION

Supreme Commander, Allied Powers in Europe.—It was announced at the White House in Washington on 11th April that General Dwight D. Eisenhower had asked to be relieved of his post as Supreme Commander, Allied Powers in Europe, by approximately 1st June and to be placed on the inactive list after his return to the United States, and that the Secretary of Defence, Mr. Robert Lovett, with the approval of the President, had agreed to this request.

On 28th April, it was announced from the White House that President Truman, in response to the request of the North Atlantic Council, had nominated General Mathew Ridgway, Supreme Commander, Allied Powers in Japan and United Nations Commander in Korea, as successor to General Eisenhower in the post of Supreme Commander, Allied Powers in Europe, under the N.A.T.O. At the same time the President announced that General Mark Clark, Commander of the United States Army Field Forces, would succeed General Ridgway in the Far East. Subsequently, on the same date, the North Atlantic Council adopted a resolution declaring that it reposed the greatest faith in General Ridgway who was formally appointed successor to General Eisenhower with the same powers and functions.

On 30th May, General Eisenhower officially relinquished his post of Supreme Commander, Allied Powers in Europe, under the N.A.T.O., and handed over his duties to General Ridgway.

The Atlantic Command.—The following list of subordinate Commanders is additional to the list given under this heading in the May, 1952, Journal :—Commander, Biscay Sub-Area : Vice-Admiral Robert (France). Commander, Maritime Forces, Morocco : Vice-Admiral Sol (France). Commanders, Canadian Atlantic Sub-Area : Rear-Admiral R. E. S. Bidwell, R.C.N., and Air-Commodore A. D. Ross, R.C.A.F. Commander, United States Atlantic Sub-Area : Vice-Admiral Oscar Badger, U.S. Navy.

Changes in previously published titles of Sub-Area Commands have been announced as follows :—

" North-Eastern Atlantic Sub-Area " will in future be known as " Central Sub-Area," and " Northern European Sub-Area " as " Northern Sub-Area." These changes are applicable to both the naval and air commands. The areas of the commands which lie within the United Kingdom Home Station Command will be known as " Western Approaches " and " Northern Approaches " respectively.

Land Forces, Southern and South-Eastern Europe.—The Italian Government approved on 15th June the appointment of Lieut.-General Enrico Frattini as C.-in-C. of N.A.T.O. Land Forces, Southern Europe, in succession to General Castiglioni, who, it was announced, was retiring for reasons of age.

On 16th July, General Ridgway, Supreme Allied Commander, Europe, announced that there will be two land sectors within the Southern Europe Command, under the overall command of Admiral Carney, United States Navy, with headquarters at Naples: (1) Allied Land Forces, Southern Europe, as at present constituted under Lieut.-General Frattini, and (2) Allied Land Forces, South-Eastern Europe, to be commanded by a United States officer who will be designated later (General Willard G. Wyman was appointed subsequently). The commander of Allied Land Forces, South-Eastern Europe, will have operational control of assigned ground forces in Greece and Turkey, and separate Greek and Turkish Army commands will operate under his control.

The nucleus of a tactical air force headquarters will be established with Allied Land Forces, South-Eastern Europe, and will form part of Allied Air Forces, Southern Europe, under the overall command of Major-General D. M. Sclatter, United States Air Forces.

The naval forces of Greece and Turkey will remain for the present under their national chiefs of staff, operating in close co-ordination with the Commander, Allied Naval Forces, Southern Europe, and with the commanders of other Allied forces in the Mediterranean.

The decision to modify the structure of the Southern Europe Command was taken with the full concurrence of the interested Governments and with the approval of the Military Committee of the N.A.T.O.

Reorganization of Tactical Air Forces, Central Europe.—A reorganization of the Tactical Air Forces, Central Europe, was announced on 20th April, under which two Allied Tactical Air Forces were formed with immediate effect: (1) the 2nd Allied Tactical Air Force under the command of Air Marshal Sir Robert Foster (Great Britain), and (2) the 4th Tactical Air Force under the command of Major-General Dean C. Strother (U.S.A.).

It was stated that the 2nd Allied Tactical Air Force would include the British 2nd Tactical Air Force, the Netherlands Tactical Air Command, and a Belgian wing of three squadrons; and that the 4th Tactical Air Force would include the United States 12th Air Force, the French 1st Air Division, and the Royal Canadian Air Force squadrons in Europe. Both Tactical Air Forces would remain responsible to General Norstad, C.-in-C. Allied Air Forces, Central Europe.

Exercise "Beehive II."—From 11th to 14th June an exercise known as "Beehive II" took place in the central Mediterranean involving the attack and defence of convoys and air and amphibious assaults on Malta. Units of five N.A.T.O. nations were concerned, under the overall direction of the British Commander-in-Chief, Mediterranean, Admiral the Earl Mountbatten of Burma, from headquarters at Malta. Forces (Red) under his command endeavoured to pass convoys through and across the Mediterranean. Forces under the United States Sixth Fleet (Blue), commanded by Vice-Admiral J. H. Cassady, sought to intercept them and to make an amphibious assault on Malta by U.S. Marines. French forces, under Vice-Admiral P. E. M. J. Barjot, sailed from Bizerta, and French land-based aircraft operated from North African bases. Ships of the Greek Navy, under Rear-Admiral P. Lappas, who had been paying an official visit to Malta, also took part. Italian warships under Rear-Admiral Mimbelli co-operated in the seaward defence of Malta and in attacks on Blue shipping in the Sicilian Channel.

Ashore, operations in defence of Malta were conducted by the Air Officer Commanding, R.A.F., Air Vice-Marshal N. H. D'Aeth; the General Officer Commanding, Major-General W. E. G. Hemming; and the Flag Officer, Malta, Vice-Admiral G. A. B. Hawkins. Some of the British aircraft engaged were flown by pilots of the Royal Naval Volunteer Reserve and the Royal Auxiliary Air Force, who had flown to Malta from the United Kingdom for their annual period of continuous training with the Regular Forces.

Exercise "Castanets."—A major N.A.T.O. naval and maritime air exercise, the largest held since the 1939–45 War, involving over 250 ships and some 400 aircraft, took place from 18th to 25th June under the code-name "Castanets." Forces of nine countries were engaged—Belgium, Canada, Denmark, France, the Netherlands, Norway, Portugal,

the United Kingdom and the United States. The main objects were to exercise the war-time Command organization of the Channel and Home Commands and their approaches, and to exercise Allied maritime forces in war operations, particularly those involved in the protection of trade and in mining counter-measures. The exercise envisaged a situation in which Blue forces, defending continental countries and the United Kingdom, were threatened by Red forces, in occupation of part of Northern Europe.

The exercise was conducted by Admiral of the Fleet Sir Arthur Power, acting in his capacity as Commander-in-Chief, Home Station (Designate) and Allied Commander-in-Chief, Channel, from headquarters at Fort Southwick, near Portsmouth. The naval forces of Blue were under his general direction. Admiral Sir George Creasy, as Commander-in-Chief, Eastern Atlantic, from maritime headquarters at Pitreavie, near Rosyth, controlled considerable naval international striking forces. Blue land-based maritime aircraft were under the overall control of the Allied Maritime Air Commander-in-Chief, Channel Command, and Air Officer Commanding-in-Chief, Coastal Command, Air Marshal Sir Alick Stevens, from his headquarters at Northwood, Middlesex. Area control was exercised by sub-area commanders at Walcheren, Chatham, Cherbourg, Plymouth, Brest, and Rosyth.

Red (the attacking forces) were controlled as follows :—submarines, by the Flag Officer, Submarines, Rear-Admiral G. W. G. Simpson, from Londonderry ; reconnaissance aircraft of Coastal Command operating in support of submarines, by the Director, R.A.F., Joint Anti-Submarine School, Londonderry, Group Captain F. A. Pearce ; E-boats, by the Captain, Coastal Forces, at Den Helder, Captain W. G. Parry, R.N. ; surface raiders and minelayers, by the Conducting Authority ; and attacking aircraft, by the authorities under whom they normally operated. The area within which operations extended was from a position about 300 miles West of Ireland to the Atlantic seaboard of southern Norway, Denmark, the Netherlands, Belgium, and France as far South as Brest.

EUROPEAN DEFENCE COMMUNITY

The protracted negotiations on the establishment of a European Defence Community (E.D.C.), which had commenced in Paris on 15th February, 1951, ended on 8th May, 1952, on which date a draft treaty setting up the E.D.C. was initialled at the *Quai d'Orsay* by the experts of the six participating countries—France, Western Germany, Italy, Belgium, Holland, and Luxemburg.

On 27th May, the day after the signature in Bonn of the new contractual agreements between the German Federal Republic and the Western Powers, the E.D.C. Treaty was formally signed by M. Schuman (France), Dr. Adenauer (Western Germany), Signor De Gasperi (Italy), M. Van Zeeland (Belgium), Dr. Stikker (Holland) and M. Bech (Luxemburg). In addition, the six Foreign Ministers and Mr. Eden signed the treaty of guarantee between the E.D.C. and the United Kingdom, whilst Mr. Eden, Mr. Acheson, and M. Schuman signed a tripartite declaration on behalf of their Governments.

The E.D.C. treaty and its many related conventions, protocols, and annexes comprised a mass of documents running into hundreds of pages. Among the various documents signed by the Foreign Ministers were the following : (1) the Treaty of the E.D.C., comprising 131 Articles ; (2) a military protocol dealing with the organization, formation and training of the European Defence Forces ; (3) a special military protocol, which was not published and details of which remain secret ; (4) a financial protocol ; (5) a protocol containing undertakings of mutual assistance between member-countries of the E.D.C. and member-countries of the N.A.T.O. ; (6) a protocol on the special position of Luxemburg ; (7) a convention on commercial and fiscal relations within the area of the E.D.C. nations ; (8) the treaty of mutual assistance between Great Britain and the E.D.C. ; (9) the tripartite declaration stating that Great Britain and the U.S.A. would regard any threat to the integrity or unity of the E.D.C. as a threat to their own security, and that they would station on the continent of Europe " such forces as they deem necessary and appropriate to contribute to the joint defence of the North Atlantic area."

(This declaration represented the response to the French Government's request for an Anglo-American guarantee against the possible secession of Western Germany from the European Defence Community.)

(Under the Brussels Treaty of 1948, Great Britain was already bound for 50 years to give France, the Netherlands, Belgium and Luxemburg " all military and other aid and assistance " in her power in the event of an " armed attack in Europe." Under the North Atlantic Treaty of 1949, Britain was also bound to the same Powers, as well as to the other members of the N.A.T.O. for 20 years, Article 5 of that treaty providing that " an armed attack against one or more (of the member-countries) shall be considered an attack against them all." Moreover, the Foreign Ministers of Britain, France, and the U.S.A. declared after their New York meeting in 1950 that an attack upon Western Germany and Western Berlin would be regarded by them as an attack upon themselves. Finally, Britain had agreed at the Lisbon conference of the North Atlantic Council in February last to a protocol to the Atlantic Treaty containing obligations of reciprocal mutual assistance between members of the N.A.T.O. and members of the E.D.C.)

GREAT BRITAIN

Big Amphibious Demonstration

More than 800 Service men took part in the biggest amphibious and cliff assault demonstration since the war at Southsea and the Isle of Wight early in May. The demonstration was arranged for students of the Royal Navy, Army and Royal Air Force Staff Colleges and other officers of the three Services.

The demonstration included an amphibious assault on the beaches at Eastney, Southsea, demonstrating the complete technique of amphibious assault from reconnaissance to the landing of armoured vehicles, including Centurion, Churchill, and Sherman tanks; and a beach landing and assault on the 250 ft. cliffs at Culver Cliff, near Sandown, Isle of Wight, by a detachment from the Commando School, Royal Marines.

Forces taking part represented all three Services. In addition to the Commando troops, they included a troop of the 4th Queen's Own Hussars (who recently returned to the United Kingdom after service in Korea) and the 1st Battalion, The Gloucestershire Regiment. Landings of troops and marines were from landing ships and craft controlled from the landing ship headquarters, H.M.S. *Meon* (Commander H. A. I. Luard, R.N.). Jet aircraft of both the Royal Navy and the Royal Air Force provided air support for the assaulting troops; rocket, bomb and shell bursts being simulated by electrically-controlled explosions on the beaches. The attacking troops used flame throwers. The demonstration was arranged and directed by H.Q. Portsmouth Group, Royal Marines.

Chief Staff Officer to the Minister of Defence and Deputy Secretary (Military) of the Cabinet

It was announced on 29th April that the Prime Minister, Mr. Churchill, had approved the appointment of Major-General Sir Ian Jacob, who has been temporarily released by the B.B.C., to be Chief Staff Officer to the Minister of Defence and Deputy Secretary (Military) to the Cabinet with the rank of Lieut.-General, with effect from 5th May.

Home Guard

Recruiting.—Recruiting began all over the Country on 28th April, and some 33,500 Home Guard registration forms were reported to have been received by the War Office on 29th April.

Eligibility.—All the information a prospective volunteer should want is given in a four-page leaflet issued by the War Office, entitled *Home Guard*.

From this it appears that eligible volunteers are all men who live in Britain who are between the ages of 18 and 65 and of reasonable physical fitness. The minimum period

of service is two years, but a member may resign by giving not less than one month's notice to his commanding officer. Normal duty (which means duty until, in an extreme emergency, the Home Guard is mustered) is a minimum of 15 hours every three months.

Civil Defence

Recruiting.—The Home Office announced on 28th April that since 15th November, 1949, when recruiting opened, 191,305 men and women had joined the Civil Defence Corps, 11,900 the Auxiliary Fire Service, 21,538 the National Hospital Service Reserve, and 24,803 the Special Constabulary.

Exercise "Jupiter."—This exercise, which was held on 5th and 6th July, involved the Army, the Metropolitan Police, and the Civil Defence organization in London.

The objects of the exercise were as follows :—(*a*) to practise the military organization in London in dealing with situations such as might occur immediately after the outbreak of a war ; (*b*) to test signal communications in London ; and (*c*) to practise liaison between the Army, the Metropolitan Police and the Civil Defence authorities.

The exercise took the form of a " telephone battle " in which various military staffs were represented. The majority of the officers taking part were reservist officers who had been called up for two weeks' training. The communications network was manned by Royal Signals of London District Signal Regiment, reservists doing their two weeks' training in the Army, and by W.R.A.C. Signals of the Territorial Army.

The Combined Cadet Force Association

The Combined Cadet Force is the modern name for the Cadet Corps in schools which keep boys up to the age of 17. It is the direct descendant of the School Rifle Volunteer Corps which were formed in 1859. In 1907, the majority of the School Cadet Corps were formed into the junior division of the Officers' Training Corps, while the remaining cadet units in schools became part of the Territorial Cadet Force. In 1938, the O.T.C. changed its name to the Junior Training Corps, while the cadet units in secondary grammar schools were part of the Army Cadet Force. In 1941 and 1942, a number of school units of the Sea Cadet Corps and Air Training Corps were formed.

In 1948, the Combined Cadet Force was formed and absorbed the great majority of school cadet units of all kinds. The C.C.F. has now a strength of 1,524 officers and 61,250 cadets, and there are 327 contingents. Each contingent has a basic army section and one or more Service sections which give naval, military or air training as such to its cadets. Membership is confined to boys in the school.

There have been two organizations which have interested themselves for many years in the well-being of school cadet units, the Officers' Training Corps Officers' Club (subsequently called the C.C.F. Officers' Club), and the Public Secondary Schools Cadet Association. A negotiating committee was set up by these two bodies, which recommended a complete merger, and the formation of a Combined Cadet Force Association. This proposal was accepted by the Service Departments, the Headmasters' Associations, and the Council of Territorial and Auxiliary Forces' Associations, and an Interim Committee has been working out the details of the constitution and the scope and functions of the C.C.F.A.

The President of the Interim Committee has been General Sir Oliver Leese, Bart., the Chairman, Major-General J. C. Latter, and the Vice-Chairman, Colonel J. M. West. Members of the Committee have been drawn from schools of varying types interested in cadet work. The Headmasters' Conference, Incorporated Association of Headmasters, and Association of Senior Secondary Schools in Scotland have been represented, and the Service Departments have sent observers.

The draft constitution was circulated to schools in November, 1951, and 164 schools have so far agreed to join.

The first General Meeting was held at the Royal United Service Institution, Whitehall, London, S.W.1, on 17th April, 1952.

The objects of the Association are: (*a*) to act as a social club for officers of the Combined Cadet Force Association; (*b*) to act as a clearing house for information for contingent commanders and to supply information regarding the Combined Cadet Force to schools who have no Combined Cadet Force contingent and to other interested organizations or persons; (*c*) to carry out such agency functions as may be deemed appropriate in the interests of the Combined Cadet Force as a whole.

The affairs of the Association will be managed by a Council elected on a regional basis, and by committees of the Council. The members of the Council will be predominantly school masters who command C.C.F. contingents.

DOMINIONS AND COLONIES

CANADA

EXERCISE "BULL PUP."—This Army-R.C.A.F. exercise, which took place during the first fortnight in June, was designed to train soldiers and airmen in joint planning and airborne operations. Supported by Corps troops, the exercise consisted of photo-reconnaissance, live bombing by the R.C.A.F., and a paratroop assault by a company of the 2nd Battalion, Princess Patricia's Light Infantry, which has been converted into a paratroop unit since returning from Korea.

MILITARY EQUIPMENT SENT TO EUROPE.—Shipments to Europe during April, under the N.A.T.O. mutual aid plan, included generators and anti-tank bombs for France; range-finders, generators, lathes, and compasses for Italy; and Vickers machine guns with maintenance stores for the Netherlands. In May, 36 25-pounder guns and 72 artillery trailers were sent to Portugal. In June, 72 25-pounder guns with full equipment, 144 artillery trailers, and medium artillery ammunition were shipped to Italy; and in July, 250 two-inch mortars were sent to Norway. Earlier this year Canada shipped 60 anti-aircraft guns with radar, predictors, and ammunition to France.

SOUTH AFRICA

NEW DECORATIONS FOR UNION ARMED FORCES

It was announced on 3rd April by the Union Defence Minister, Mr. Erasmus, that nine exclusively South African decorations had been instituted for award to members of the Union Armed Forces, both for valour and for service. It was officially stated that the new South African decorations would supplement, and not replace, British decorations, and that members of the South African armed forces would still be entitled to receive and wear British decorations such as the V.C. and the D.S.O.

FOREIGN

BURMA

TERMINATION OF STATE OF WAR WITH JAPAN

The state of war between Burma and Japan was officially terminated by the Government of Burma on 30th April, on which date the Japanese Government was notified of this action through the British Embassy in Tokio.

EGYPT

MILITARY COUP D'ETAT

On 23rd July, armed forces led by Major-General Mohammed Neguib occupied Cairo in the early hours of the morning. Major-General Neguib proclaimed himself Commander-in-Chief of the Egyptian Armed Forces and was subsequently confirmed in this appointment by King Farouk. His predecessor, Marshal Mohammed Haider, and other senior officers were placed under arrest. The object of the *coup*, as stated by General Neguib, was to force a return to constitutional life and to purge the Army of corrupt elements. By the evening the *coup* had led to the return of Aly Maher Pasha as Prime Minister in place of Hilaly Pasha whose Cabinet had been sworn on 22nd July.

On 26th July, King Farouk agreed to abdicate in favour of his infant son the Crown Prince Ahmed Fuad who was proclaimed King of Egypt and the Sudan. The ex-king left Egypt by sea from Alexandria later in the day.

JAPAN

Peace Treaty

The Japanese Peace Treaty came officially into force on 28th April, on which date, as required under Article 23 of the Treaty, instruments of ratification had been deposited in Washington by the United States and Japanese Governments and by a majority of 13 other countries specified in the Treaty.

KOREA

For a diary of the war in Korea, see page 430.

RUSSIA

The 1952–53 Budget

The Soviet budget for 1952–53 was introduced in the Supreme Soviet on 6th March by M. Zverev, the Finance Minister. It provided for expenditure totalling 476,900,000,000 roubles and revenue of 508,800,000,000 roubles. This compared with an estimated expenditure of 441,300,000,000 roubles and revenue of 468,000,000,000 roubles in the budget for 1951–52. The allocation of 113,800,000,000 roubles for defence in 1952–53 compares with the estimated figure of 96,400,000,000 roubles for defence in 1951–52. M. Zverev said that this allocation would permit the carrying out of the necessary measures for further strengthening the defence of the Soviet Union and, after alleging that the United States, Britain, France, and other " aggressive " countries were making intensive preparations for another world war, he asserted that the U.S.S.R. had no aggressive plans and was nowhere taking part in military operations.

It was pointed out in the British Press that the figures given for Soviet defence expenditure were not comparable to those in Western budgets for the following reasons :— (*a*) In the Soviet Union large sectors of the economy, financed in the West by private enterprise, were run by the State, raising the total budget expenditure to about two-thirds of the whole national income. (*b*) The heading " Defence " in the Soviet budget covered only the direct expenditure of Service Ministries on the maintenance of the armed forces and the purchase of their arms at cost prices, and excluded such items as military installations and armament factories which appeared under " grants to the national economy." (*c*) The cost of large para-military forces maintained by the Ministry of the Interior appeared under " administration and justice." (*d*) The development of atomic energy came under " social and cultural services."

UNITED STATES

Military Assistance Agreements.—Bilateral military assistance agreements were signed by the United States with Ecuador on 20th February, with Peru on 22nd February, with Cuba on 7th March, with Brazil on 15th March, and with Chile on 9th April. The agreements, concluded under the provisions of the Mutual Security Act of 1951, provided for United States aid to the countries concerned in arms, equipment, and technical skill in exchange for access to their raw materials and the promise of armed support, if required, in the common defence of the Western Hemisphere.

Director of Defence Mobilization.—Mr. Charles E. Wilson resigned on 30th March from the post of Director of Defence Mobilization, and Dr. John R. Stedman was appointed as his temporary successor.

New Atomic Plant.—The United States Atomic Energy Commission announced on 11th April that it was planning to build a new atomic plant on a 5,000–6,000 acre site in the Ohio River valley. This new plant will be the fifth to be operated by the Atomic Energy Commission.

ATOMIC WEAPON TESTS.—Six further tests of atomic weapons were carried out during April and May at the testing grounds in the Nevada desert. United States troops took part in three of these tests.

It was reported from Washington on 8th May that Mr. Frank Pace, the Army Secretary, had disclosed that a prototype of an atomic gun, weighing 75 tons and mounted on a platform between two engine cabs, had shown under test that it is likely to be much more accurate at long ranges than normal artillery, while at shorter ranges it has equal accuracy.

NOTICES

NEW GIFT PARCEL SERVICE FOR BRITISH TROOPS STATIONED IN MALAYA, KOREA, AND JAPAN

Since 1st May, 1952, the N.A.A.F.I. has conducted a new gift parcel scheme for British troops stationed in Malaya, Korea, and Japan. The scheme is designed primarily to save the sender of a parcel the heavy cost of postage from the United Kingdom to the area concerned.

Relatives and friends in the United Kingdom may order through the N.A.A.F.I. canteens and family shops (if authorized to deal), or alternatively direct from the N.A.A.F.I. headquarters, one or more of a range of standard gift parcels to be consigned to any member of the British naval, military and air forces who is actually stationed ashore in Malaya (excluding Singapore), Korea, or Japan. On receipt of the order, the N.A.A.F.I. will immediately arrange for particulars to be flown to a N.A.A.F.I. establishment in the area concerned where the appropriate parcel will be assembled, packed, and posted to the addressee. Delivery to the addressee will be effected through the army post office in Korea and Japan, and the civilian postal authorities in Malaya.

The sender has the choice of some forty different parcels, ranging in price from 5s. to 30s. each, with contents selected to suit either cigarette smokers or pipe smokers. Everyday necessities, such as soap or razor blades, are not included in the parcels which contain the little extras popular with Service men. Details of the sender are also included.

All those wishing to send parcels who are not authorized to visit N.A.A.F.I. canteens or shops should write to Forces' Parcel Service, O.C.S., N.A.A.F.I., Esher, Surrey, from which full particulars of the prices and contents of the range of parcels, and order forms, can be obtained.

It is emphasized that this scheme will operate only for British Service men actually stationed ashore in the three areas—Malaya (excluding Singapore), Korea, and Japan.

ARMY ART SOCIETY

There are probably many amateur artists serving in the Forces who have not heard of this Society. It is an entirely unofficial organization and exists to encourage art amongst past and present members of the three fighting Services. For several years, very successful exhibitions have been held in London each Autumn and these afford an opportunity for young artists—who often have the advantage of painting subjects overseas—to show their works and compare them with others. This adds a real interest and object to their hobby.

The work of serving personnel, of all ranks, is particularly welcome and intending exhibitors are invited to apply now for particulars about the next (21st) Exhibition. This will be held at the Imperial Institute, South Kensington, from 21st October to 9th November, 1952.

Applications should be addressed to :—E A. Callam, Esq., Hon. Secretary, Army Art Society, 66, Apsley House, St. John's Wood, London, N.W.8.

NAVY NOTES

GREAT BRITAIN

H.M. The Queen

Colours.—Her Majesty The Queen has approved that the existing King's Colours in the Royal Navy are in future to be known as the Queen's Colours. When the Colours now in use become unserviceable they will be replaced by Colours bearing the cypher of Her Majesty. H.R.H. The Duchess of Kent presented the Queen's Colour to the Portsmouth Command on 22nd May, on the parade ground of the Royal Naval Barracks.

Aide-de-Camp.—Captain C. E. Duggan, R.D., R.N.R., has been appointed a Royal Naval Reserve Aide-de-Camp to the Queen from 14th June, 1952, in place of Captain A. I. Robertson, R.D., R.N.R.

Hon. Physician.—Surgeon Rear-Admiral R. W. Mussen, C.B.E., has been appointed Honorary Physician to the Queen from 31st March, 1952.

Hon. Surgeon.—Surgeon Rear-Admiral J. Hamilton, C.B.E., has been appointed Honorary Surgeon to the Queen from 31st March, 1952.

Hon. Chaplain.—The Rev. F. N. Chamberlain, O.B.E., R.N., has been appointed Honorary Chaplain to the Queen in succession to the Ven. Archdeacon L. Coulshaw, C.B., M.C., R.N., placed on the Retired List, to date 15th May, 1952.

H.R.H. The Duke of Edinburgh

The promotion of Lieutenant-Commander H.R.H. the Duke of Edinburgh, K.G., to Commander was announced in the half-yearly list of promotions issued by the Admiralty on 30th June. His Royal Highness was promoted to Lieutenant-Commander in July, 1950.

Board of Admiralty

Normandy Anniversary.—At the annual ceremony on the invasion beaches of Normandy to mark the anniversary of the landing of the British and American Armies on 6th June, 1944, the Prime Minister on this occasion asked the Board of Admiralty to represent Her Majesty's Government. The Board, represented by the First Lord, the Right Hon. J. P. L. Thomas, the Second Sea Lord, Vice-Admiral Sir Alexander Madden, and the Vice-Chief of the Naval Staff, Vice-Admiral G. Grantham, crossed from Portsmouth in a destroyer.

Visit to H.M.S. Eagle.—The First Lord of the Admiralty, accompanied by the Secretary of State for Air and the Minister of Supply, visited H.M.S. *Eagle* on 20th June. The party proceeded from Northolt in an R.A.F. Valetta aircraft to Arbroath, and from there was conveyed in naval aircraft which landed on the deck of the *Eagle* in the Moray Firth.

Visit to Germany.—The First Sea Lord, Admiral Sir Rhoderick McGrigor, left Northolt in a naval aircraft on 16th June on a three-day visit to Royal Naval ships and establishments in Germany.

Honours and Awards

Birthday Honours

The following awards were included in the Queen's Birthday Honours List published on 5th June :—

K.C.B.—Vice-Admiral Guy Grantham, C.B., C.B.E., D.S.O. ; Vice-Admiral William R. Slayter, C.B., D.S.O., D.S.C.

C.B.—Rear-Admiral (E) F. E. Clemitson ; Rear-Admiral E. G. A. Clifford ; Rear-Admiral C. John ; Surgeon Rear-Admiral T. Madill, O.B.E. ; Rear-Admiral C. F. W.

Norris, D.S.O.; Rear-Admiral C. R. L. Parry, D.S.O.; Rear-Admiral P. S. Smith, D.S.O.; Rear-Admiral (S) E. L. Tottenham, O.B.E.; Lieutenant-General J. C. Westall, C.B.E., R.M.

K.B.E.—Vice-Admiral W. Y. La R. Beverley, C.B., C.B.E.; Vice-Admiral G. A. B. Hawkins, C.B., M.V.O., D.S.C.

Flag Appointments

Portsmouth.—Admiral Sir John H. Edelsten, K.C.B., C.B.E., appointed Commander-in-Chief, Portsmouth, in succession to Admiral of the Fleet Sir Arthur J. Power, G.C.B., G.B.E., C.V.O. (September, 1952).

The Nore.—Admiral the Hon. Sir Cyril E. Douglas-Pennant, K.C.B., C.B.E., D.S.O., D.S.C., appointed Commander-in-Chief, The Nore, in succession to Admiral Sir Cecil H. J. Harcourt, K.C.B., C.B.E. (November, 1952).

Washington.—Vice-Admiral C. C. Hughes-Hallett, C.B., C.B.E., appointed Admiral, British Joint Services Mission, Washington, in succession to Admiral the Hon. Sir Cyril Douglas-Pennant (July, 1952).

Far East.—Rear-Admiral R. M. J. Hutton, C.B., C.B.E., D.S.O., was on 18th April appointed Flag Officer Commanding 5th Cruiser Squadron and Flag Officer Second-in-Command, Far East Station, in succession to Rear-Admiral A. K. Scott-Moncrieff, C.B., D.S.O. (August, 1952). On 28th May, on account of ill-health, the appointment of Rear-Admiral Hutton was cancelled, and Rear-Admiral E. G. A. Clifford was appointed in his place (September, 1952).

A.C.N.S.—Captain R. F. Elkins, C.V.O., O.B.E., A.D.C., appointed Assistant Chief of Naval Staff in succession to Rear-Admiral E. G. A. Clifford, C.B. (30th June, 1952).

D.C.N.P.—Rear-Admiral Maxwell Richmond, D.S.O., O.B.E., appointed Deputy Chief of Naval Personnel (Training) and Director of Naval Training, in succession to Rear-Admiral C. F. W. Norris, C.B., D.S.O. (July, 1952).

Training Squadron.—Rear-Admiral J. F. Stevens, C.B., C.B.E., appointed Flag Officer, Home Fleet Training Squadron, in succession to Commodore B. I. Robertshaw, C.B.E. (July, 1952).

Heavy Squadron.—Rear-Admiral J. Hughes-Hallett, C.B., D.S.O., appointed Flag Officer, Heavy Squadron, Home Fleet, in succession to Rear-Admiral Caspar John, C.B. (July, 1952).

Vice-Controller (Air).—Rear-Admiral Caspar John, C.B., appointed Vice-Controller (Air), Chief of Naval Air Equipment and Chief Naval Representative at the Ministry of Supply, in succession to Rear-Admiral E. M. C. Abel Smith, C.B., C.V.O. (August, 1952).

Malta.—Rear-Admiral J. S. C. Salter, D.S.O., O.B.E., appointed Flag Officer, Malta, and Admiral Superintendent, H.M. Dockyard, Malta, in succession to Vice-Admiral G. A. B. Hawkins, C.B., M.V.O., D.S.C. (September, 1952).

Mediterranean.—Rear-Admiral W. W. Davis, C.B., D.S.O., appointed Flag Officer (Air), Mediterranean, in succession to Vice-Admiral R. A. B. Edwards, C.B., C.B.E. (October, 1952).

Retirements and Promotions

The following were announced to date 10th April, 1952:—

Vice-Admiral the Hon. Sir Guy H. E. Russell, K.C.B., C.B.E., D.S.O., to be Admiral in H.M. Fleet.

Vice-Admiral Sir A. Robin M. Bridge, K.B.E., C.B. (Retired), to be Admiral on the Retired List.

Rear-Admiral C. C. Hughes-Hallett, C.B., C.B.E., to be Vice-Admiral in H.M. Fleet.

The following were announced to date 15th May, 1952 :—

Admiral Sir Harold R. G. Kinahan, K.B.E., C.B., to be placed on the Retired List.

Vice-Admiral Sir Geoffrey N. Oliver, K.C.B., D.S.O., to be promoted Admiral in H.M. Fleet.

Rear-Admiral F. R. Parham, C.B., C.B.E., D.S.O., to be promoted Vice-Admiral in H.M. Fleet.

The following was announced on 26th May :—

In view of the distinguished and outstanding services during the last war of Admiral Sir Philip Vian, G.C.B., K.B.E., D.S.O., LL.D., Her Majesty has approved as a special case his promotion to Admiral of the Fleet to date 1st June, 1952, supernumerary to the present establishment of Admirals of the Fleet.

The following was announced on 13th June :—

Rear-Admiral H. W. Faulkner, C.B., C.B.E., D.S.O., retires (27th June, 1952).

The following were announced on 8th April :—

Rear-Admirals (E) retire on the dates stated :—Sir William S. Jameson, K.B.E., C.B., and H. S. Harrison, C.B.E., D.S.C. (25th February, 1952) ; H. J. B. Moore, C.B.E. (10th March, 1952).

Surgeon Captain to Surgeon Rear-Admiral :—J. Hamilton, C.B.E., and R. W. Mussen, C.B.E. (31st March, 1952).

Rear-Admiral (S) H. P. Chapman, C.B.E., retires (31st March, 1952).

Half-Yearly Lists

The Admiralty announced the following promotions and retirements to date 8th July, 1952 :—

To be promoted to Rear-Admiral in H.M. Fleet :—

Captain L. N. Brownfield, C.B.E., A.D.C.
Captain R. F. Elkins, C.V.O., O.B.E., A.D.C.
Captain (Commodore 1st Class) G. B. H. Fawkes, C.B.E.
Captain R. G. Onslow, D.S.O., A.D.C.
Captain (Acting Rear-Admiral) W. T. Couchman, D.S.O., O.B.E., A.D.C.
Captain W. L. G. Adams, O.B.E.
Captain (Commodore 2nd Class) M. W. St. L. Searle, C.B.E.

To be placed on the Retired List in the Rank of Captain :—

Captain (Commodore 1st Class) T. M. Brownrigg, C.V.O., C.B.E., D.S.O., A.D.C.
Captain R. Gotto, C.B.E., D.S.O., A.D.C.
Captain (Commodore 2nd Class) W. P. McCarthy, A.D.C.
Captain F. B. Lloyd, O.B.E.
Captain C. C. Hardy, D.S.O.
Captain G. N. Brewer, D.S.O.
Captain N. V. Surtees, D.S.O.
Captain M. B. Laing, C.B.E.
Captain R. G. Mackay.
Captain R. Heathcote, D.S.O.
Captain R. G. Poole.

The following promotions were announced to date from 30th June, 1952 :—

Commander to Captain.—E. N. Pumphrey, D.S.O., D.S.C. ; W. F. N. Gregory-Smith, D.S.O., D.S.C. ; J. V. Waterhouse, D.S.O., O.B.E. ; C. C. Suther ; Lord Kelburn, D.S.C. ; H. C. Martell (acting Captain) ; I. F. M. Newnham ; V. A. Wight-Boycott, O.B.E., D.S.C. ; F. M. A. Torrens-Spence, D.S.O., D.S.C., D.F.C. ; W. W. Fitzroy ; H. R. Law, O.B.E., D.S.C. ; L. W. L. Argles, D.S.C. ; P. D. Gick, O.B.E., D.S.C. ;

R. D. Franks, D.S.O., O.B.E., D.S.C.; J. F. D. Bush, D.S.C. (acting Captain); J. J. E. Farnol, D.S.C.; L. E. D. Walthall, D.S.C.; G. D. Pound, D.S.C.; G. G. Wilson; A. F. Black, D.S.C.

Commander (E) to Captain (E).—A. R. Newman, O.B.E.; P. T. Joy (acting Captain (E)); J. W. Esmonde, O.B.E., D.S.C.; K. H. Smith, O.B.E.; V. St. C. L. Magniac; E. A. G. Whittle.

Commander (L) to Captain (L).—L. Bomford; S. E. Post, O.B.E.

Surgeon Commander to Surgeon Captain.—T. G. B. Crawford (acting Surgeon Captain); J. C. Gent (acting Surgeon Captain); D. F. Walsh.

Commander (S) to Captain (S).—A. G. Sowman; W. G. S. Tighe; G. Blamey, C.B.E.; G. T. Millett, C.B.E.

Exercises and Cruises

Home Fleet.—The Home Fleet assembled on 17th May at Portland, to be based there for training during the first month of the Summer exercise programme. The Commander-in-Chief, Admiral Sir George Creasy, transferred his flag from the fleet carrier *Indomitable* to the battleship *Vanguard* at Portsmouth on 12th May. H.M.S. *Indomitable* remains in commission in the Home Fleet, wearing the flag of the Flag Officer Heavy Squadron (Rear-Admiral Caspar John). The cruise included exercises in home waters, visits to ten ports and seaside resorts between 26th June and 10th July, and visits to some continental N.A.T.O. countries. The flagship *Vanguard* visited Rotterdam between 29th June and 4th July.

N.A.T.O. Exercise.—During the week beginning 19th May, Allied minesweeping and seaward defence exercises were held off the northern coast of France, in which forces from France, the Netherlands, and the United Kingdom took part, under the command of a French flag officer. (For exercises "Beehive II" and "Castanets" see General Service Notes.)

Coastal Forces.—Coastal Forces of the Royal Navy carried out a series of exercises known as "Viking" with the Danish and Norwegian Coastal Forces during the period 5th to 22nd July, each of the navies providing six fast patrol boats. On completion of harbour drills and preliminary exercises at Fredrikshavn, the boats moved to the more open waters of Oslo Fiord for advanced sea exercises, including torpedo and gunnery firings.

Submarines.—H.M.S. *Montclare* and four submarines of the Third Submarine Squadron left Rothesay on 25th May for a six-day visit to Sweden from 3rd June, calling first at Portland. The frigate *Zambesi*, a target ship attached to the squadron, accompanied them.

Mediterranean.—Following exercise "Beehive II," ships of the Mediterranean Fleet paid visits to ports in Italy, Greece, and Greek islands from 21st June as part of the Summer cruise. Some ships also visited Trieste. The *Glasgow* and *Surprise* went to the Yugoslav ports of Rijeka (Fiume) and Brioni, where Admiral Lord Mountbatten landed to visit Marshal Tito, who came on board the *Glasgow* and made a short tour of the ship.

East Indies.—Joint exercises for ships of the Royal Navy, Indian Navy, Royal Pakistan Navy, and Royal Ceylon Navy took place off Trincomalee in April. Satisfactory progress was made in this, the second annual joint exercise period, in welding together into a single team the Commonwealth Forces taking part. The cruiser *Gambia* left towards the end of April to rejoin the Mediterranean Fleet.

Far East.—Aircraft of H.M.S. *Ocean*, on their way from Singapore to Hong Kong to relieve H.M.S. *Glory* in Korean waters, carried out anti-bandit operations in the region South-West of Johore, Malaya, in May. Seven Firefly and 13 Sea Fury aircraft, fully armed and carrying rockets, attacked the enemy in two localities, 15 miles South-East of Kota Tinggi and 10 miles South of Mersing.

Two assault landing craft have joined the security forces engaged against Communist terrorists in Central Malaya. They were shipped from Hong Kong in the Royal Fleet Auxiliary *Fort Constantine* to Kuantan, and are being used in the role of gunboats. L.C.A.(F) 1195 is manned by a Royal Marine Commando crew and L.C.A.(F) 1662 by a naval crew.

America and West Indies.—H.M.S. *Sheffield*, flagship, paid a ten-day visit to Montreal in May, and was visited by some 10,000 men, women, and children. Earlier she had been to Halifax, where many sporting events with the Royal Canadian Navy were arranged. After a year's detachment from the Home Fleet to the America and West Indies Squadron, the frigate *Sparrow* returned to Devonport on 30th June.

Personnel

Minewatching Service.—The Queen has approved the uniform to be worn by members of the Royal Naval Minewatching Service. It comprises beret and battledress, greatcoat, etc., with a shoulder-flash bearing the initials R.N.M.W.S., and a badge specially designed for the Service for wear on the beret. Women watchers will have either skirt or trousers. The Service was formed in January and over 2,600 men and women had been enrolled up to the end of May. On the evening of 30th April, the first mine-watching exercise took place in Portsmouth Harbour for members living in that area.

Commodores of Convoys.—A scheme has been introduced whereby retired naval officers who might be recalled in an emergency as Commodores of Convoys have the opportunity to go to sea in merchant ships. Made possible through the good offices of the Shipping Federation and individual shipping companies, this scheme is an extension of one introduced in 1950, whereby serving officers of the Royal Navy are given experience with the Merchant Navy in order to foster liaison between the sister services.

Clothing Innovations.—Several innovations in the clothing of officers and ratings of the Royal Navy are under consideration. Specimens of new white plastic-topped caps for officers and ratings have been made and are undergoing preliminary trial. If ultimately approved for general issue, the Navy will wear a white-topped cap all the year round at home and abroad. Specimens are being prepared of warm detachable linings for both officers' and ratings' raincoats. Oilskin garments will eventually give way to those made from fabrics impregnated with polyvinyl chloride. These waterproofed garments include trousers worn with either long coats or short smocks. A hood on the long coat will take the place of the sou'wester. In cold climates kapok-lined cotton garments will be worn under this waterproofed clothing, and the duffel coat may eventually disappear.

Materiel

H.M.S. Diana.—The new destroyer *Diana*, eighth of the "Daring" class, was launched from the Scotstoun shipyard of Messrs. Yarrow and Co., Ltd., on 8th May, when Lady McGrigor, wife of the First Sea Lord, performed the naming ceremony. The *Diana* was laid down in 1947.

Minesweepers.—The first of the new inshore minesweepers was launched at the Isle of Wight yard of Messrs. J. S. White and Co., Ltd., on 23rd April, and the second at the yard of Messrs. Brooke Marine, Ltd., of Lowestoft, on 12th June. The Navy Estimates show that 29 of this class of vessel were under construction at the end of March, 1952. The first of the new coastal minesweepers was launched at the yard of Messrs. J. S. Doig, Ltd., of Grimsby, on 9th June.

Engines.—A new light-weight, high-powered Diesel engine known as the "Deltic" has been designed and developed for the Royal Navy by Messrs. D. Napier, of Acton, on behalf of their parent company the English Electric Company, Ltd. It takes the form of an opposed piston two-stroke cycle engine with a power rating up to 2,500 B.H.P. Another new design adopted by the Admiralty for inclusion in its second range of standard Diesel engines, covering requirements for 200 to 800 B.H.P. for the propulsion of small

warships such as inshore minesweepers, has been designed and produced by Messrs. Davey, Paxman, and Co., Ltd.

UNDERWATER TELEVISION.—New underwater television equipment, incorporating a strong watertight casing for a modified standard television camera and special lighting, has been developed for the Admiralty by Messrs. Pye, Ltd., of Cambridge. One set has been assembled for sea trials in the deep diving vessel *Reclaim*. A second has been ordered for experimental work at the Admiralty Research Laboratory, where a different type of casing is being developed. Both will be capable of reaching depths of 1,000 feet.

SINGAPORE DOCK SALVAGE.—Attempts are being made by the Admiralty Salvage Organization to raise the Admiralty Floating Dock No. 9 which was sunk at Singapore during the 1939–45 War. If no unforeseen difficulties are encountered it is hoped that the dock, which had a lifting capacity of 50,000 tons, will be raised this year.

NAVAL AVIATION

H.M.S. OCEAN.—Shortly after relieving H.M.S. *Glory* in Korean waters, H.M.S. *Ocean* achieved a remarkable record of operational flying. In one day the pilots of her two squadrons, No. 802 (Sea Furies) and No. 825 (Fireflies), flew a total of 123 sorties against enemy-held positions, beating the record of H.M.S. *Glory*, whose Carrier Air Group flew 105 sorties in one day. The *Ocean* set up this record after only four days in the operating area.

H.M.S. GLORY.—Two squadrons from Lee-on-Solent, No. 821 on 23rd June and No. 801 on 24th June, flew to Malta to embark in H.M.S. *Glory*, now in the Mediterranean Fleet after service in Korea.

R.N.V.R. AIR DIVISIONS.—To facilitate the expansion in an emergency of the Royal Naval Volunteer Reserve air branch, it was decided in June to form R.N.V.R. Air Divisions at four R.N. Air Stations. The Commanding Officers of the new Divisions, who formerly commanded R.N.V.R. squadrons operating from the stations concerned, are: Acting Commander (A) J. D. Murricane, D.S.C., R.N.V.R.—R.N.A.S., Donibristle, Fife; Acting Commander (A) R. I. Gilchrist, M.B.E., R.N.V.R.—R.N.A.S., Stretton, Lancs.; Acting Commander (A) G. McC. Rutherford, M.B.E., D.S.C., R.N.V.R.—R.N.A.S., Culham, Berks.; and Acting Commander (A) N. A. Bovey, D.S.C., R.N.V.R.—R.N.A.S., Ford, Sussex. They were promoted to Acting Commander as Air Division Commanding Officers from 1st June.

ROYAL NAVAL RESERVE

PROMOTIONS

Captain A. I. Robertson, A.D.C., R.D., R.N.R., has been promoted Commodore, 2nd Class, R.N.R., to date 22nd April, 1952.

The following were promoted from Commander to Captain in the half-yearly list, to date 30th June, 1952:—H. B. Peate, J. G. Bradley.

WOMEN'S ROYAL NAVAL SERVICE

INSPECTION.—H.R.H. the Duchess of Kent, Chief Commandant, after presenting the Queen's Colour to the Portsmouth Command on 22nd May, inspected a representative contingent of W.R.N.S. of the Command at the Royal Naval Barracks.

CONTINENTAL DUTY.—A party of twelve W.R.N.S. ratings under 3rd Officer P. M. Davies, W.R.N.S., embarked at Plymouth on 12th May in H.M.S. *Protector* for a port in Northern France to take part in an Allied minesweeping and seaward defence exercise in which Dutch and French forces participated. The ratings carried out radar plot duties for the seaward defence part of the exercise. This was the first time that such a party had visited the Continent for an exercise of this nature.

ROYAL MARINES

Promotions

The following were promoted from Lieutenant-Colonel to Colonel in the half-yearly list dated 30th June, 1952 :—

H. D. Fellowes, D.S.O., R. W. B. Simonds.

DOMINION AND COMMONWEALTH NAVIES

AUSTRALIA

Promotion.—The following was among the half-yearly promotions announced by the Commonwealth Naval Board to date 30th June, 1952 :—

Commander to Captain.—G. D. Tancred, D.S.C.

Atomic Weapon Test.—It was announced from 10, Downing Street, on 14th May that the test of the United Kingdom atomic weapon will be carried out at the Monte Bello Islands, off the North-West coast of Australia, as a joint operation involving the three fighting Services and the Ministry of Supply. The Australian Government and fighting Services are closely co-operating. The operation will be under the command of Rear-Admiral A. D. Torlesse, D.S.O., and the test will be under the scientific direction of Dr. W. G. Penney, O.B.E., F.R.S., of the Ministry of Supply. Besides the tank landing craft *Zeebrugge* and *Narvik*, which had already sailed carrying a detachment of Royal Engineers and stores, the Special Squadron will consist of the escort ferry carrier *Campania* (flagship), the tank landing craft *Tracker*, and the frigate *Plym*.

NEW ZEALAND

Promotion

The following was among the half-yearly promotions announced by the New Zealand Naval Board to date 30th June, 1952 :—

Commander to Captain.—P. Phipps, D.S.C., V.R.D.

PAKISTAN

Commander-in-Chief

It was announced from Karachi on 30th May that Commodore Hafiz Mohammed Siddiq Choudri will succeed Rear-Admiral J. W. Jefford as Commander-in-Chief of the Royal Pakistan Navy in February, 1953. Commodore Choudri, who is 41, began his naval career in 1931 as a cadet in the Royal Indian Marine and was commissioned two years later. After the partition he became the first Chief of Staff of the Royal Pakistan Navy.

FOREIGN NAVIES

ARGENTINA

New Base

The Ministry of Marine in Buenos Aires announced on 6th April that a new Argentine naval base had been established in the " Argentine Antarctic sector " in Hope Bay, in the extreme North-East of Grahamland. Argentina now has six bases in British Antarctica, the others being in Deception Island, Gamma Island, Marguerite Island, Punta Proa, and Laurie Island. The last-mentioned is in the South Orkneys and was established with the British Government's permission nearly 50 years ago. The others were established without British permission.

FRANCE

CHIEF OF STAFF.—Admiral H. L. G. Nomy, Chief of the French Naval Staff, arrived in London by air on 25th April on a private visit to the First Sea Lord.

SUBMARINE TRANSFERRED.—H.M. submarine *Sportsman* was transferred to the French Navy at a ceremony at Fort Blockhouse, Gosport, on 8th July. She was received by Rear-Admiral R. E. M. Blanchard, French Naval Attaché in London, and was renamed *Sibylle*. This is the last of four British submarines to be lent to the French Navy.

GREECE

SUBMARINES RETURNED

Two British submarines, which had been on loan to the Royal Hellenic Navy since 1943, arrived in Malta on 1st June to be returned to the Royal Navy. They were the *Upstart* and *Untiring*, and had operated under the Greek names of *Amphitriti* and *Xifias*. While on passage from Malta to the United Kingdom on 23rd June the *Untiring* developed engine defects off Cape St. Vincent. She was able to continue her voyage at four knots, but a naval tug was sent from Portsmouth to meet her and the *Upstart*.

UNITED STATES

MARINE CORPS.—The House of Representatives on 16th May voted by 253 to 32 to make the Commandant of the Marine Corps a member of the Joint Chiefs of Staff. *The Times* Correspondent at Washington said that President Truman and the Defence Department had always opposed this and similar Bills introduced in the past, and it was expected that it would be vetoed if it passed the Senate, of which there seemed no doubt.

General Lemuel C. Shepherd, junior, Commandant of the Marine Corps, arrived in London on 17th April on a week's visit at the invitation of the First Sea Lord, in return for the visit paid by the Commandant General, Royal Marines, to the U.S. Marine Corps last October.

FIRST ATOMIC SUBMARINE.—President Truman attended the keel-laying at Groton, Connecticut, on 14th June of the first atomic energy submarine, the U.S.S. *Nautilus*.

AIRCRAFT CATAPULT.—The Navy Department stated on 29th April that the new British aircraft catapult (see the February, 1952, JOURNAL, page 120), regarded by the U.S. authorities as one of the most important naval developments since the war, is to be adapted for use in American aircraft carriers, and will be first installed in the U.S.S. *Hancock*.

NEW AIRSHIP.—A non-rigid airship, said to be the biggest of its type ever built, was flown on 16th June from Akron, Ohio, where it was built, to the naval air station at Lakehurst, New Jersey. The craft, which has taken two years to build, is 324ft. long and 35ft. high, and is capable of travelling at about 80 m.p.h. It has engines that can be maintained and repaired during flight, and naval officers say that it is superior to the type used extensivly during the last war in hunting submarines.

DESTROYER SUNK.—The destroyer *Hobson*, 1,630 tons, was sunk early on the morning of 27th April in collision with the aircraft carrier *Wasp* during manœuvres in mid-Atlantic. Of the crew of 14 officers and 223 enlisted men there were only 61 survivors. The bow of the *Wasp* was damaged, but she was fitted at New York with a new section of bow weighing 90 tons cut from a sister ship, the *Hornet*, so that repairs which would have normally taken three months were completed in 10 days.

ARMY NOTES

GREAT BRITAIN

H.M. The Queen

The Queen was present at The Queen's Birthday Parade on the Horse Guards Parade on 5th June. Her Majesty was accompanied by the Duke of Gloucester (Colonel, Scots Guards).

The Queen visited the Regimental Depot of The Dorset Regiment at Dorchester on 3rd July.

Queen Elizabeth, The Queen Mother, inspected the 1st Battalion, The Black Watch (Royal Highland Regiment), of which Regiment Her Majesty is Colonel-in-Chief, at Crail Camp, Fife, on 13th May.

The Duke of Gloucester, Colonel-in-Chief of The Gloucestershire Regiment, presented on behalf of The Queen new Colours to the 1st Battalion at Spa Park, Gloucester, on 26th April.

On 9th May, the Duke of Gloucester arrived in Germany by air on a tour of inspection of the 10th Royal Hussars and the 1st Battalion, The Rifle Brigade, of which he is Colonel-in-Chief. A guard of honour was mounted at Buckeburg air station by the Royal Army Service Corps, of which His Royal Highness is also Colonel-in-Chief.

The Duke of Gloucester presented, on behalf of The Queen, new Colours to the 1st Battalion, The South Staffordshire Regiment, at Thiepval Barracks, Lisburn, on 22nd May.

On 9th June, the Duke of Gloucester opened the new County of London Territorial Association's Drill Hall in Davies Street as the Regimental Headquarters of Queen Victoria's Rifles.

The Duke of Gloucester, as Colonel of the Regiment, inspected the 2nd Battalion, Scots Guards, at Chelsea Barracks on 22nd July.

The Princess Royal visited the 1st Battalion, The West Yorkshire Regiment, at Pontefract on 10th June.

On 22nd June, the Princess Royal was present at a Church Parade of Territorial Units of the Royal Corps of Signals and Women's Royal Army Corps, of which Her Royal Highness is Colonel-in-Chief and Controller Commandant respectively, at Thiepval Barracks, Lisburn; and, on 23rd June, Her Royal Highness visited Northern Ireland District (Mixed) Signal Squadron, Royal Corps of Signals, at Thiepval Barracks, Lisburn.

On 21st and 22nd July, the Princess Royal, as Colonel-in-Chief and Controller Commandant respectively, inspected units of the Royal Corps of Signals and the Women's Royal Army Corps in Western Command.

The Princess Royal, Colonel-in-Chief, unveiled The Royal Scots Monument in Princes Street Gardens, Edinburgh, on 26th July.

The Queen has approved the following appointments :—

To be Aide-de-Camp General to the Queen.—General Sir Ouvry L. Roberts, K.C.B., K.B.E., D.S.O., late R.E. (27th June, 1952), vice General Sir Brian Robertson, Bart., G.C.B., G.B.E., K.C.M.G., K.C.V.O., D.S.O., M.C., tenure expired.

To be Aide-de-Camp to the Queen.—Brigadier W. S. Clarke, C.B.E., D.S.O., late R.A.C. (22nd February, 1952), vice Brigadier H. T. de B. Lipscomb, retired.

To be Aides-de-Camp (Additional) to the Queen.—Colonel (Honorary Brigadier) C. W. Raw, C.B.E., T.D., D.L., late R.A. (30th November, 1951), vice Colonel (Honorary Brigadier) Sir Geoffrey S. Church, Bart., C.B.E., M.C., T.D., D.L., J.P., tenure expired; Colonel (Honorary Brigadier) A. D. McKechnie, D.S.O., O.B.E., T.D. (27th April, 1952), vice Colonel (Honorary Brigadier) H. C. Murgatroyd, C.B.E., M.C., T.D., tenure expired.

To be Honorary Surgeon to the Queen.—Major-General F. K. Escritt, O.B.E., late R.A.M.C. (30th April, 1952), vice Lieut.-General Sir Neil Cantlie, K.B.E., C.B., M.B., F.R.C.S., retired.

To be Honorary Dental Surgeons to the Queen.—Colonel N. F. Smith, late R.A.D.C. (10th May, 1952), vice Colonel J. L. Gibson, retired; Colonel A. Brazenar, F.D.S., late R.A.D.C. (22nd May, 1952), vice Colonel W. L. Pearson, retired.

To be Colonels Commandant.—Of The Royal Artillery, Major-General E. B. de Fonblanque, C.B., C.B.E., D.S.O. (11th March, 1952), vice Lieut.-General Sir Thomas Hutton, K.C.I.E., C.B., M.C., tenure expired, and Major-General M. S. Chilton, C.B., C.B.E. (16th May, 1952), vice Lieut.-General Sir W. W. Green, K.B.E., C.B., D.S.O., M.C., tenure expired.

To be Colonels of Regiments.—Of the 13th/18th Royal Hussars, Major-General C. H. Miller, C.B., C.B.E., D.S.O. (15th April, 1952), vice Colonel (Honorary Brigadier) J. N. Lumley, C.B.E., M.C., tenure expired; of The Border Regiment, Major-General V. Blomfield, C.B., D.S.O. (3rd June, 1952), vice Colonel (Honorary Major-General) P. J. Shears, C.B., tenure expired; of The Black Watch (Royal Highland Regiment), Major-General N. McMicking, C.B., C.B.E., D.S.O., M.C. (19th June, 1952), vice General Sir Neil Ritchie, G.B.E., K.C.B., D.S.O., M.C., resigned; of The Durham Light Infantry, Lieut.-General Sir Terence Airey, K.C.M.G., C.B., C.B.E. (10th April, 1952), vice Colonel (Honorary Brigadier) J. A. Churchill, C.B.E., D.S.O., M.C., tenure expired.

Honours and Awards

The following were included in The Queen's Birthday Honours List, published on 5th June, 1952:—

G.C.B.—General Sir G. Ivor Thomas, K.C.B., K.B.E., D.S.O., M.C.

K.C.B.—Lieut.-General Sir Neil Cantlie, K.B.E., C.B., M.C., M.B., F.R.C.S.; Lieut.-General Sir George W. E. J. Erskine, K.B.E., C.B., D.S.O.

C.B.—Major-General E. R. Benson, C.M.G., C.B.E.; Major-General (temporary) J. B. Churcher, D.S.O., A.D.C.; Brigadier (temporary) R. K. Exham, C.B.E., M.C.; Major-General H. C. Goodfellow, C.B.E.; Brigadier W. D. C. Greenacre, D.S.O., M.V.O.; Major-General J. L. P. Haines, C.B.E.; Major-General A. G. Harsant, O.B.E., M.D., M.S., Q.H.S.; Major-General G. C. Humphreys, C.B.E.; Major-General G. H. Inglis, C.B.E.; Major-General C. P. Jones, C.B.E., M.C.; Major-General R. W. McLeod, C.B.E.; Major-General G. E. Prior-Palmer, D.S.O.; Honorary Brigadier E. O. Skaife, O.B.E., D.L. (now retired); Major-General (temporary) W. L. D. Veitch, C.B.E.

K.B.E.—Lieut.-General (temporary) C. M. Barber, C.B., D.S.O.; Lieut.-General F. W. Festing, C.B., C.B.E., D.S.O.

O.B.E.—Lieut.-Colonel (temporary) Phyllis Widger, R.R.C., Queen Alexandra's Royal Army Nursing Corps.

Bar to the Royal Red Cross, First Class.—Colonel Edith M. B. Dyson, R.R.C., Queen Alexandra's Royal Army Nursing Corps.

Royal Red Cross, First Class.—Major Jane Carson, Queen Alexandra's Royal Army Nursing Corps; Major Edna M. Gaunt, Queen Alexandra's Royal Army Nursing Corps.

Appointments

War Office.—General Sir John Harding, G.C.B., C.B.E., D.S.O., M.C., A.D.C., appointed Chief of the Imperial General Staff (1st November, 1952).

General Sir Ouvry L. Roberts, K.C.B., K.B.E., D.S.O., appointed Quarter-Master-General to the Forces (August, 1952).

Major-General R. B. B. B. Cooke, C.B., C.B.E., D.S.O., to be Director, Royal Armoured Corps (August, 1952).

Major-General F. R. G. Matthews, C.B., D.S.O., appointed Director of Infantry (September, 1952).

Colonel (temporary Major-General) J. H. O. Wilsey, C.B.E., D.S.O., appointed Director of Staff Duties (September, 1952).

Colonel (temporary Major-General) D. C. T. Swan, C.B.E., to be Director, Fortifications and Works (October, 1952).

UNITED KINGDOM.—Major-General J. H. N. Poett, C.B., D.S.O., appointed Commander, 3rd Infantry Division (2nd May, 1952).

Brigadier E. P. N. Creagh, M.B., M.R.C.P., appointed Deputy Director, Medical Services, with the temporary rank of Major-General (1st July, 1952).

Major-General E. E. Down, C.B., C.B.E., appointed G.O.C.-in-C., Southern Command, with the temporary rank of Lieut.-General (August, 1952).

Brigadier W. R. Goodman, D.S.O., M.C., appointed G.O.C., 3 Anti-Aircraft Group, with the temporary rank of Major-General (October, 1952).

Major-General E. M. Bastyan, C.B., C.B.E., appointed Commander, 53 (Welsh) Infantry Division (T.A.) and Mid-West District (November, 1952).

Colonel (temporary Brigadier) G. D. Fanshawe, D.S.O., O.B.E., appointed G.O.C., 1 Anti-Aircraft Group, with the temporary rank of Major-General (November, 1952).

GERMANY.—Lieut.-General Sir Richard N. Gale, K.B.E., C.B., D.S.O., M.C., appointed Commander-in-Chief, B.A.O.R. (September, 1952).

GIBRALTAR.—Lieut.-General Sir Gordon MacMillan of MacMillan (of Knap), K.C.B., C.B.E., D.S.O., M.C., appointed Commander-in-Chief, Gibraltar, without remuneration from Army funds (9th May, 1952).

AUSTRIA.—Major-General R. E. Urquhart, C.B., D.S.O., appointed G.O.C.-in-C., British Troops in Austria (July, 1952).

MIDDLE EAST LAND FORCES.—Colonel (temporary Brigadier) T. Brodie, C.B.E., D.S.O., appointed Commander, 1st Infantry Division, with the temporary rank of Major-General (July, 1952).

FAR EAST LAND FORCES.—Lieut.-General Sir Terence S. Airey, K.C.M.G., C.B., C.B.E., appointed Commander, British Forces Hong Kong (22nd January, 1952). Substituted for the notification in the November, 1951, JOURNAL.

Major-General Sir Hugh Stockwell, K.B.E., C.B., D.S.O., appointed G.O.C., Malaya (11th June, 1952).

KOREA.—Major-General M. M. Alston-Roberts-West, C.B., D.S.O., appointed Commander, Commonwealth Division, Korea (August, 1952).

PAKISTAN.—Colonel (temporary Brigadier) P. St. Clair-Ford, D.S.O., appointed Training Adviser (Major-General), Pakistan Army, with the temporary rank of Major-General (August, 1952).

SPECIAL EMPLOYMENT.—Colonel (Honorary Major-General) Sir Ian Jacob, K.B.E., C.B., B.A., R.A.R.O., to be specially employed with the temporary rank of Lieut.-General, without pay and allowances from Army funds (5th May, 1952).

PROMOTIONS

Lieut.-General.—Temporary Lieut.-General to be Lieut.-General :—F. Harris, C.B., C.B.E., M.C., M.B., Q.H.S. (29th April, 1952).

Colonel (Honorary Major-General) to be temporary Lieut.-General :—Sir Ian Jacob, K.B.E., C.B., B.A., R.A.R.O. (5th May, 1952).

Major-Generals.—Temporary Major-Generals, Brigadiers, or Colonels to be Major-Generals :—F. K. Escritt, O.B.E. (29th April, 1952).

Brigadiers or Colonels to be temporary Major-Generals :—E. P. N. Creagh, M.B., M.R.C.P. (1st July, 1952).

Retirements

The following General Officers have retired :—Major-General J. S. Ballentine, C.B., C.I.E. (24th August, 1948) ; Lieut.-General Sir Neil Cantlie, K.B.E., C.B., M.C., M.B., F.R.C.S., Q.H.S. (29th April, 1952) ; Major-General L. K. Lockhart, C.B., C.B.E., M.C. (14th May, 1952) ; Major-General J. A. Sinclair, C.B., O.B.E. (30th May, 1952) ; General Sir Kenneth A. N. Anderson, K.C.B., M.C. (6th June, 1952).

The following officer of Q.A.R.A.N.C. has retired :—Brigadier Dame Anne Thomson, D.B.E., R.R.C. (23rd July, 1952).

Chief of the Imperial General Staff's Annual Conference

The Chief of the Imperial General Staff's annual conference of British Commanders-in-Chief and Commonwealth Chiefs of Staff was held on 25th, 26th, and 27th June at the School of Artillery, Larkhill. Topics of interest to the British Commonwealth armies were discussed.

Staff College and Technical Staff Course Examination Results

A list of the officers who were successful in the Staff College and Technical Staff Course entrance examinations held in February, 1952, was published in *The Times* of 27th June.

New Direct Entry Scheme leading to Regular Commissions through the Military College of Science, Shrivenham

The War Office has decided to introduce a new direct entry scheme leading to Regular commissions through the Military College of Science, Shrivenham, into the technical arms, for young men of high academic and scientific ability. This scheme will enable candidates to obtain a university degree whilst holding the rank and receiving the pay of an officer, and with the minimum break in their academic studies. It is open to both schoolboys and serving National Service officers and other ranks.

Candidates will first be interviewed by the Regular Commissions Board. If recommended they will be called up for National Service and will undergo the normal training for National Service officers, being granted National Service commissions as 2nd lieutenants after approximately six months service as other ranks.

On attaining their National Service commissions they will be employed for at least six months at regimental duty. They will then enter the Military College of Science to read for a London University external B.Sc. degree in general science or in engineering. The course will last two years for a science degree and three years for an engineering degree. In addition to academic studies the instruction will include appropriate military and recreational training in order to develop powers of leadership.

After two years at the Military College of Science officers will be granted Regular commissions, and on graduation they will be given antedates to bring them into line for seniority with their contemporaries who have been commissioned through the Royal Military Academy, Sandhurst. Candidates will be expected to undertake to serve as officers for at least five years after finishing their degree course.

In order to qualify for acceptance under this scheme applicants must :—

(*a*) have passed the appropriate Inter-B.Sc. examination in general science or in engineering ; or

(*b*) possess a general certificate of education affording matriculation with passes at advanced level as follows :—*For the General Science Course.*—Passes in any three of the four subjects : pure mathematics, applied mathematics, physics, and chemistry. *For the Engineering Course.*—Passes in three of the four subjects : mathematics, applied mathematics, physics, and chemistry ; provided that the applicant has sat for the examination in the fourth subject, and can produce a certificate from his headmaster that there is a reasonable prospect of his passing in this subject during his final year's study at Shrivenham.

In the case of a candidate educated in Scotland or Ireland, a certificate from the Scottish Education Department or from the Ministry of Education in Northern Ireland showing that he has reached an equivalent standard may be accepted in lieu of the above.

From the time they are commissioned as National Service officers until they have completed two years at the Military College of Science, entrants will hold the rank of 2nd lieutenant and will receive 13s. per day. On receiving Regular commissions after completing their second academic year at the Military College of Science, they will receive the same rate of pay as Regular officers. Promotion to lieutenant will be granted two years from the date to which their Regular commission is antedated.

Young men serving as National Service officers can also apply for this form of entry if they have the qualifications described above and are recommended by their commanding officers. They will then have to attend the Regular Commission Board, and if accepted for entry will have to complete six months service at regimental duty if they have not already done so. They will be paid in accordance with the rates described above from the time that they join the Military College of Science.

The following age limits will apply :—(*a*) Schoolboy entrants must be more than 17½ and less than 19½ on 1st September of the year in which they are first called up. (*b*) Serving National Service entrants must be more than 18½ and less than 20½ on 1st September of the year they enter the Military College of Science.

Applications should be submitted to the War Office, (AG1(Officers)O), Lansdowne House, Berkeley Square, London, W.1, together with either proof of having obtained the educational qualifications laid down, or a certificate from the applicant's headmaster showing that he is sitting for the appropriate examinations this Summer and that he has a reasonable prospect of passing them. Evidence to show that the applicant has obtained the necessary qualifications will be required in due course.

In order to begin the scheme as soon as possible the first entry to the Army will be in September or October this year and successful candidates will enter the Military College of Science in the Autumn of 1953. Applications should therefore reach the War Office as soon as possible and in any case before 1st September, 1952.

Applications from serving National Service officers and men will be considered at any time provided it is possible for them to complete, or if they have completed, six months as an officer before joining the Military College of Science, and provided that they have the necessary qualifications.

Return of Units from the Middle East

Owing to the reinforcement of the Middle East theatre by the 3rd Commando Brigade, Royal Marines, from Malaya, it is intended to return certain units to the United Kingdom starting in September. These units will include : Headquarters, 39 Infantry Brigade ; 1st Battalion, The Buffs ; 1st Battalion, The Devonshire Regiment, and 1st Battalion, The Royal Inniskilling Fusiliers. Moves of these units will, of course, be subject to operational requirements at the time. All units will be stationed in Dover except for the 1st Battalion, The Devonshire Regiment, which will go to Colchester.

Army Recruiting

The Regular Army recruiting statistics for the month of June show an increase over May of 61 men enlisted from civil life, while the numbers re-enlisting from Short Service engagements and National Service dropped by 70 and 102 respectively.

The total enlistments from civil life during the month were 3,384 men and 130 boys, compared with 3,323 and 182 in May. The figures for re-enlistments were 56 from Short Service (May, 126) and 757 from National Service (May, 859).

Army Emergency Reserve

On 22nd July, it was announced in the House of Commons by the Secretary of State for War, Mr. Head, that it had been decided to rename the Army Supplementary Reserve

the Army Emergency Reserve. Mr. Head said that he was not satisfied with recruiting for this Reserve and that he had taken steps to increase publicity and thus, he hoped, recruiting. The title Supplementary Reserve was neither descriptive nor inspiring. Subsequently, the War Office announced that new enlistment periods for the Army Emergency Reserve will be two, three, or four years instead of four years only as hitherto.

The Meritorious Service Medal

The award of the Meritorious Service Medal is now subject to new regulations.

Under the old regulations, personnel who had 21 years' colour service and also fulfilled certain other conditions could be recommended for the Meritorious Service Medal. The names of all recommended candidates were placed on a registered list; the medal, which carried an annuity of £10, was limited, however, to 750 living recipients. They received the medal and annuity as vacancies were caused by the death of current holders.

The new regulations, which are retroactive to 1st January, 1951, separate the award of the medal and the annuity. The £10 annuity is still limited to 750 recipients, and the system of awarding it is unchanged. The medal, however, is now being issued to *all* candidates who were registered up to the beginning of 1951. Subsequent candidates are subject to the new regulations which, in addition to other slight changes, extend the qualifying period of colour service from 21 to 22 years. In future, not more than 100 medals may be issued in respect of each calendar year to selected personnel who meet these conditions. Their names will continue to be registered for the purposes of the annuity.

It has not been possible to trace the present addresses of a number of candidates who were registered under the old conditions. Any person who was discharged from the Service, and who was informed in writing that he had been registered for the award of the M.S.M. *and annuity*, and who has not yet received his medal may make application to the War Office (M.S.3), Stanmore, Middlesex, giving particulars of his service, regiment or corps, army number, and date of discharge.

War Memorials

Corps of Royal Engineers.—The Roll of Honour of the Corps of Royal Engineers for 1939–45 was dedicated at a service in St. Paul's Cathedral on 17th June and laid up in the Kitchener Memorial Chapel. The Roll of Honour was unveiled by General Sir Edwin Morris, Chief Royal Engineer, and dedicated by the Archdeacon of London, the Ven. O. H. Gibbs-Smith, who conducted the service.

The Buffs (Royal East Kent Regiment).—The King of Denmark, Colonel-in-Chief of The Buffs (Royal East Kent Regiment), was present at a service in Canterbury Cathedral on 10th May "to remember before God those members of The Buffs, the Queen's Own Rifles of Canada, and their Danish brothers-in-arms, who, in defence of their Country, have laid down their lives." The King of Denmark unveiled the new Memorial Window which was dedicated by the Dean of Canterbury, who also dedicated an altar, a cross, candlesticks, and an altar carpet which were given in remembrance.

The Royal Warwickshire Regiment.—Field-Marshal Viscount Montgomery of Alamein, Colonel of The Royal Warwickshire Regiment, unveiled a Memorial Window in the Regimental chapel at St. Mary's Collegiate Church, Warwick, on 13th June, commemorating 1,136 members of the Regiment who died in the 1939–45 War. The window was dedicated by the Chaplain General to the Forces, Canon V. J. Pike, who also dedicated a chapel altar, a ciborium, and a Roll of Honour.

The Cheshire Regiment.—On 8th June, a Memorial Plinth to the memory of the officers and men of The Cheshire Regiment who fell in the 1939–45 War was unveiled by the Lord Lieutenant of Cheshire, Lord Leverhulme, and dedicated by the Bishop of Chester, Dr. Crick, in the Garden of Remembrance in the grounds of Chester Cathedral.

THE HONOURABLE ARTILLERY COMPANY.—Two Memorial Windows in memory of the 723 members of the Honourable Artillery Company who died in the 1939–45 War were dedicated by the chaplain and unveiled by Field-Marshal Viscount Alanbrooke in the hall of Armoury House on 26th July. A Book of Remembrance was placed beside that for the 1914–18 War.

MISCELLANEOUS

PRESENTATION OF COLOURS.—Field-Marshal Viscount Alanbrooke presented Colours to the 10th (County of London) Territorial Battalion of The Parachute Regiment in the Tower of London on 27th July. The Colours were consecrated by Cannon V. J. Pike, Chaplain-General to the Forces.

PLAQUE PRESENTED AT MALTA.—At a ceremonial parade in Palace Square, Valletta, on 1st May, Sir Gerald Creasy, the Governor, on behalf of the people of Malta, received from Major-General W. E. G. Hemming, G.O.C. Troops, a plaque commemorating the war-time association with the island of 7 (now 79) Heavy Anti-Aircraft Regiment, Royal Artillery.

KERMIT ROOSEVELT LECTURES.—General John E. Hull, Vice Chief of Staff, United States Army, arrived in this Country on 9th May to deliver the Kermit Roosevelt lectures. He lectured at the Staff College, Camberley, on " Problems facing the United States Army" on 12th May, at the Royal Military Academy on " Leadership " on 15th May, and at The Imperial Defence College on " United States Global Strategy " on 19th May.

BISLEY.—Q.M.S. Instructor T. Seaman, of the Small Arms School, Hythe, won the British Army rifle championship ; A.Q.M.S. Mitchell, R.E.M.E., was second. Lieutenant J. P. Goodacre, 305 Medium Regiment, R.A. (Bedford Yeomanry), won the Territorial Army championship. The Ashburton Shield was won by Glenalmond College, Epsom College was second, and Exeter School third.

SUMMER EVENING CONCERTS.—From 25th June to 30th July the band of the Royal Military School of Music performed every Wednesday at 8 p.m. in the grounds of Kneller Hall, Whitton. From 20th August to 24th September a second series will be held every Wednesday beginning at 7.30 p.m.

QUEEN ALEXANDRA'S ROYAL ARMY NURSING CORPS.—Queen Alexandra's Royal Army Nursing Corps celebrated its 50th anniversary this year with a week of social events which began on 3rd June.

DOMINIONS AND COLONIES

CANADA

H.M. THE QUEEN.—The Queen has expressed her wish to continue as Colonel-in-Chief of the Argyll and Sutherland Highlanders of Canada (Princess Louise's), Le Regiment de la Chaudière, and the 48th Highlanders. Her Majesty was Colonel-in-Chief of these battalions as The Princess Elizabeth.

General H. D. G. Crerar, C.H., C.B., D.S.O., C.D., has been appointed Aide-de-Camp General to The Queen.

HONOURS AND AWARDS.—The following award was published in *The London Gazette* dated 10th June, 1952 :—

C.B.—Brigadier J. M. Rockingham, C.B.E., D.S.O., for distinguished services in Korea while in command of the 25th Canadian Infantry Brigade.

APPOINTMENT.—Brigadier A. F. B. Knight, O.B.E., is to become Vice Adjutant-General at Army Headquarters at the end of this year, succeeding Brigadier J. W. Bishop, O.B.E.

FORMATION OF A FIELD ARTILLERY REGIMENT AND THREE BATTALIONS.—Batteries and companies recruited by Reserve Force units for the Active Force at the same time

as units for the 27th Infantry Brigade have been formed into a field artillery regiment and three infantry battalions. For the past year these batteries and companies have been stationed in various camps across Canada. The new artillery regiment is the 81st Field Regiment, Royal Canadian Artillery, supported by the 81st Field Regiment Signal Troop and 198 Light Aid Detachment, Royal Canadian Electrical and Mechanical Engineers. The new infantry battalions are the 2nd Canadian Rifle Battalion, the 2nd Canadian Highland Battalion, and the 2nd Canadian Infantry Battalion.

Move of Active Force units to Summer Camps.—More than 5,800 Canadian Active Force troops moved into Summer camps at Wainwright, Valcartier, and Aldershot early in May. Twenty-two units took part in moves for Summer training.

Bridge built by Canadian Army Engineers.—The largest bridge ever built by Canadian Army Engineers was opened to traffic recently at the Donjek River crossing on the Alaska highway. The 1,600 ft. bridge, made up of eight 200 ft. trusses set on concrete piers and abutments, crosses the Donjek, a mild river in dry seasons but a torrent in flood periods, and is the longest span on the 1,221 mile highway. It replaces a timber trestle bridge that was washed out regularly by Spring floods every year.

Officer Cadets Training in Germany.—Fourteen officer cadets from Canadian universities who reported to the 27th Infantry Brigade on 24th June to commence Summer training with field units, brought the total number of such students in Germany up to 70. A total of 74 cadets are expected to take part in this training during the Summer.

AUSTRALIA

Honours and Awards.—The following was included in The Queen's Birthday Honours List, published on 5th June, 1952 :—

C.B.—Major-General J. A. Chapman, D.S.O.

Appointments.—Lieut.-General F. H. Berryman, C.B., C.B.E., D.S.O., who was on duty with the Prime Minister's Department as Director-General of the projected Royal Tour, has resumed his appointment as G.O.C. Eastern Command.

Lieut.-General V. C. Secombe, C.B.E., D.S.O., who was temporarily G.O.C. Eastern Command, has resumed his appointment as G.O.C. Northern Command.

Major-General R. King, C.B.E., D.S.O., has relinquished command of Northern Command to become G.O.C. Central Command.

Brigadier G. E. W. Hurley, O.B.E., has been appointed Commander, Tasmania Command.

Brigadier K. D. Chalmers, has been appointed Inter-Services Technical Officer in the United Kingdom.

Colonel T. Daly, D.S.O., O.B.E., has been appointed Commander, 28th Brigade, in Korea, in which the 1st and 3rd Battalions, Royal Australian Regiment, are serving.

Lieut.-Colonel E. G. McNamara, E.D., will replace Lieut.-Colonel T. F. Cape, D.S.O., M.B.E., as an instructor at the Staff College, Camberley, at the end of the year.

Visit to Korea.—Lieut.-General S. F. Rowell, Chief of the General Staff, Australian Military Forces, visited units of the 1st Commonwealth Division in Korea recently. He was accompanied by Lieut.General W. Bridgeford, C.-in-C. British Commonwealth Occupation Forces in Japan.

New Three-year Term of Enlistment.—A new three-year term of enlistment for full-time duty at home and abroad with the Australian Regular Army has been announced by the Minister of Defence, Mr. Joseph Francis. Men so enlisted will be on the Regular Army Special Reserve. The Minister said that the new term had been introduced because many young men who desired to serve full time in the Army were not prepared initially to commit themselves for the normal six-year term. The new plan also displaces the special two-year Korea Service engagement which, although it had produced the necessary men, was too short, as little use could be made of men as instructors on their return from Korea.

WOMEN'S OFFICER CADET SCHOOL.—The opening of a Women's Officer Cadet School to provide young officers for the Women's Royal Australian Army Corps was recently announced by the Minister for the Army, Mr. Joseph Francis. Each course will consist of 30 cadets and will last five months.

FOREIGN

FRANCE

MARSHALS OF FRANCE

On 7th May, on the proposal of M. Pleven, Minister of National Defence, the French Cabinet decided to confer the rank of Marshal of France on General Juin, and posthumously on General Leclerc. In the case of General Juin the promotion became effective by decree, while a *projet de loi*, posthumously conferring the honour on General Leclerc, was unanimously voted by the French National Assembly on 26th June, under the style of "General Leclerc de Hautecloque, Marshal of France."

ITALY

MILITARY UNIT ASCENDS THE MATTERHORN

Led by Captain Constanzo Piccio, the 43rd Company of the Aosta Battalion, Italian Alpini, consisting of about 80 men, fully armed and equipped and carrying mortars, machine-guns, wireless sets, and other equipment, climbed to the summit of the Matterhorn on 27th June, during Summer manœuvres. The ascent took eight hours. This is the first time that a fully equipped military unit has accomplished this feat.

UNITED STATES

COMMANDER, ARMY FIELD FORCES

The Army Secretary, Mr. Frank Pace, announced on 28th April that Lieut.-General John Hodge would succeed General Mark Clark as Commander, United States Army Field Forces.

AIR NOTES

GREAT BRITAIN

H.M. The Queen

In celebration of Her Majesty's birthday on 5th June, 18 Shackleton aircraft of Coastal Command carried out a fly-past over Buckingham Palace.

The Queen has been graciously pleased to retain her appointment as Honorary Air Commodore of the three Edinburgh units of the Royal Auxiliary Air Force. Her Majesty accepted this appointment in July, 1951, when she was Princess Elizabeth. The three units are No. 602 (City of Edinburgh) Squadron and its associate units, No. 2603 Squadron, R.Aux.A.F. Regiment, and No. 3603 Fighter Control Unit.

Queen Elizabeth the Queen Mother and Princess Margaret made a four-hour flight in a de Havilland Comet-1 jet airliner on 23rd May, during which they travelled a total distance of 1,850 miles and flew over France, Switzerland, and Italy. Much of the flight was made at a height of 40,000 ft. in clear weather at a speed of about 500 miles an hour. For the whole journey the Comet's speed averaged 462 m.p.h.

The Duke of Edinburgh flew from Northolt on 16th May to visit the R.A.F. Coastal Command station at St. Eval. He spent nearly five hours on the station and saw the Command's latest anti-submarine weapons. The Duke presented the Dunning Memorial Cup to No. 210 Squadron based at St. Eval, for successes on courses at the Joint Anti-Submarine School at Londonderry. The Duke was accompanied on his inspection by the A.O.C.-in-C., Coastal Command, Air Marshal Sir Alick Stevens, and the A.O.C., No. 19 Group, Coastal Command, Air Vice-Marshal T. C. Traill. He returned to London by air in the evening in a Viking of the Queen's Flight.

Aides-de-Camp.—It was announced in *The London Gazette* of 10th June, that H.M. The Queen had approved the reappointment of Royal Air Force officers as Aides-de-Camp, Chaplains, Honorary Chaplains, Honorary Physicians, Surgeons, and Dental Surgeons who held similar appointments under His late Majesty King George VI.

Appointed Honorary Nursing Sister To The Queen.—Air Commandant R. M. Whyte, R.R.C., Princess Mary's Royal Air Force Nursing Service, is appointed Honorary Nursing Sister to the Queen. (24th June, 1952.)

Honours and Awards

The following awards were included in The Queen's Birthday Honours :—

K.C.B.—Air Marshal Sir Hugh S. P. Walmsley, K.C.I.E., C.B., C.B.E., M.C., D.F.C. ; acting Air Marshal J. D. I. Hardman, C.B., O.B.E., D.F.C.

C.B.—Acting Air Marshal J. MacC. Kilpatrick, O.B.E., M.B., B.Ch., Q.H.P. ; Air Vice-Marshal H. L. Patch, C.B.E. ; acting Air Vice-Marshal L. Dalton-Morris, C.B.E. ; Air Commodore B. E. Essex, C.B.E. ; Air Commodore G. S. Shaw (Retired) ; Air Commodore M. Watson, C.B.E. ; acting Air Commodore A. D. Selway, D.F.C. ; Group Captain L. S. Snaith, A.F.C. ; Group Captain D. M. T. MacDonald.

K.C.V.O.—Air Commodore E. H. Fielden, C.B., C.V.O., D.F.C., A.F.C.

Appointments

The Air Ministry has announced that on 1st January, 1953, Marshal of the Royal Air Force Sir John C. Slessor, G.C.B., D.S.O., M.C., will relinquish the post of Chief of the Air Staff. The Queen has been pleased to appoint Air Chief Marshal Sir William F. Dickson, K.C.B., K.B.E., D.S.O., A.F.C., to succeed him.

The Air Ministry has also announced that it has been decided to transpose the titles of the Vice and Deputy Chiefs of the Air Staff, without any alterations in their duties, as a matter of convenience in order to conform with the corresponding titles and duties of the Vice and Deputy Chiefs of Staff in the Admiralty and War Office.

The present Vice Chief of the Air Staff, Air Chief Marshal the Hon. Sir Ralph A. Cochrane, G.B.E., K.C.B., A.F.C., A.D.C., will retire on termination of his present appointment on 1st November, 1952. He will be succeeded by Air Marshal Sir Ronald Ivelaw-Chapman, K.B.E., C.B., D.F.C., A.F.C., with the title of Deputy Chief of the Air Staff.

On the same date the present Deputy Chief of the Air Staff, Air Chief Marshal Sir John W. Baker, K.C.B., M.C., D.F.C., will assume the title of Vice Chief of the Air Staff while retaining his present duties.

Air Marshal Sir John Whitworth Jones, K.C.B., C.B.E., appointed Air Member for Supply and Organization (1st September, 1952).

Air Marshal Sir Francis J. Fogarty, K.B.E., C.B., D.F.C., A.F.C., appointed Air Member for Personnel (1st November, 1952).

AIR MINISTRY.—Air Vice-Marshal N. S. Allinson, C.B., appointed Director-General of Personnel (I) (11th April, 1952).

Air Commodore (acting Air Vice-Marshal) C. E. H. Allen, C.B., D.F.C., B.A., M.I.Mech.E., appointed Director-General of Technical Services (19th May, 1952).

Air Vice-Marshal L. J. V. Bates, C.B., C.B.E., appointed Director-General of Equipment (1st September, 1952).

MINISTRY OF SUPPLY.—Air Vice-Marshal C. N. H. Bilney, C.B., C.B.E., appointed Vice-President of the Ordnance Board (1st July, 1952).

HOME COMMAND.—Air Marshal Sir Thomas M. Williams, K.C.B., O.B.E., M.C., D.F.C., appointed A.O.C.-in-C. (30th September, 1952).

FLYING TRAINING COMMAND.—Air Vice-Marshal L. F. Pendred, C.B., M.B.E., D.F.C., appointed A.O.C.-in-C., with the acting rank of Air Marshal (1st August, 1952).

FIGHTER COMMAND.—Air Vice-Marshal H. A. Constantine, C.B., C.B.E., D.S.O., appointed Officer in charge of Administration (August, 1952).

TECHNICAL TRAINING COMMAND.—Air Commodore W. H. Merton, O.B.E., appointed A.O.C., No. 22 Group, with the acting rank of Air Vice-Marshal (August, 1952).

MAINTENANCE COMMAND.—Air Commodore H. D. Jackman, C.B., C.B.E., appointed A.O.C., No. 40 Group, with the acting rank of Air Vice-Marshal (10th June, 1952).

FAR EAST AIR FORCE.—Air Vice-Marshal A. C. Sanderson, C.B., C.B.E., D.F.C., appointed C.-in-C., Far East Air Force (May, 1952).

Air Commodore W. J. M. Ackerman, C.B.E., to be Air Officer in charge of Administration (August, 1952).

MALTA.—Air Vice-Marshal B. V. Reynolds, C.B.E., appointed A.O.C. (August, 1952).

MIDDLE EAST AIR FORCE.—Air Vice-Marshal H. V. Satterly, C.B., C.B.E., D.F.C., appointed A.O.C., No. 205 Group (July, 1952).

SCHOOL OF LAND-AIR WARFARE.—Air Vice-Marshal L. F. Sinclair, G.C., C.B., C.B.E., D.S.O., appointed Commandant (August, 1952).

PROMOTIONS

Air Vice-Marshal (acting Air Marshal) to be Air Marshal.—Sir James D. Hardman, K.C.B., O.B.E., D.F.C. (1st July, 1952).

Air Commodores to be Air Vice-Marshals.—C.A. Stevens, C.B., C.B.E., M.C., (acting Air Vice-Marshal); H. A. Constantine, C.B., C.B.E., D.S.O.; L. F. Sinclair, G.C., C.B., C.B.E., D.S.O.; H. V. Satterly, C.B., C.B.E., D.F.C.; A. W. B. McDonald, C.B., A.F.C. (1st July, 1952).

Retirements

Air Vice-Marshal A. P. Ledger, C.B., C.B.E., is placed on the Retired List at his own request (17th May, 1952).

Air Commandant Dame Helen W. Cargill, D.B.E., R.R.C., Q.H.N.S., is placed on the Retired List on account of medical unfitness for Air Force service (12th May, 1952).

Operations

Hornet Aircraft in Malaya.—Documents captured from bandits in Malaya show clearly that air strikes by twin-engined Hornets are having a considerable effect against the enemy.

Auster Aircraft in Korea.—Auster two-seater aircraft are being used successfully over the front line in Korea, acting as artillery spotters for the Commonwealth Division artillery units.

Flights

By Shackleton to U.S.A.

For his recent visit to the United States for meetings with Admiral McCormick, Supreme Allied Commander Atlantic, the Air Officer Commanding-in-Chief, Coastal Command, Air Marshal Sir Alick Stevens, who is also Allied Air Commander-in-Chief, Channel Command, travelled across the Atlantic in an Avro Shackleton aircraft.

Training

Changes in R.A.F. Ground Defence Training.—Important changes have now been made in ground defence training for the Royal Air Force. In future all officers and airmen must attain certain standards of efficiency in this subject. In addition officers and airmen of R.A.F. Regiment depots and schools in various parts of the Country have formed mobile columns to augment army contingents in operation against enemy paratroops.

Camp for University Air Squadrons.—Most of the 900 under-graduates of 17 Universities who are members of University Air Squadrons are expected to attend Summer camps this year. More than 80 additional aircraft have been made available to the squadrons for the period of the camps. All (except the University of London Air Squadron) will train at R.A.F. Stations.

Post for Sir Hugh Walmsley.—Air Marshal Sir Hugh S. P. Walmsley, K.C.B., K.C.I.E., C.B.E., M.C., D.F.C., until lately Air Officer Commanding-in-Chief, Flying Training Command, has now retired and taken up the post of Managing Director of Air Service Training at Hamble.

Personnel

More R.A.F. Pilots for Korea.—More Royal Air Force pilots will be posted for service in Korea under an expansion of the exchange posting system between the R.A.F., Commonwealth Air Forces, and the United States Air Force. The object of this development is to create a nucleus of R.A.F. pilots with first-hand combat experience against the types of fighter aircraft now being used by the Communist forces in Korea. Pilots will be selected from Fighter Command and the Second Tactical Air Force.

Commissions for National Service Men.—Several hundreds of the men who are now registering for National Service will have the opportunity of being selected for commissions in the flying and ground branches of the Royal Air Force during their two years' service.

Reserves

No. 600 (City of London) Squadron R.Aux.A.F.—After Queen Elizabeth the Queen Mother had made her flight in a Comet on 23rd May, Her Majesty sent the following telegram to No. 600 (City of London) Squadron of which she is the Honorary Commodore:—"I am delighted to tell you that to-day I took over as first pilot of a Comet aircraft. We

exceeded a reading of 0.8 Mach at 40,000 ft. Thoughts turned to 600 Squadron. What the passengers thought I really wouldn't like to say. (Signed) Elizabeth R., Honorary Air Commodore, 600 Squadron." On behalf of the officers and men of the unit, Squadron Leader J. Meadows, the C.O., immediately replied :—" Already excited at news of your Majesty's jet flying. Your Squadron is honoured to have been in your Majesty's thoughts and overwhelmingly proud that their Honorary Air Commodore piloted a jet as high and as fast as any of her Squadron's pilots.—(Signed) Meadows, Squadron Leader."

R.Aux.A.F. Fighter Squadrons Summer Camps.—Fourteen squadrons of the Royal Auxiliary Air Force are flying their jet fighters overseas to Summer practice camps, half of them to Malta and half to Germany. The ground crews are being flown out in transport aircraft. The other squadrons are spending their fortnight's camp at Fighter Command stations in England and Scotland.

R.Aux.A.F. Gunners in Germany.—Winners and runners-up of last year's Lloyds Trophy, No. 2502 (Ulster) and No. 2602 (City of Glasgow) Squadrons, R.Aux.A.F., are holding their Summer camp on the island of Sylt, in North Germany. The remaining squadrons are spending their 14 days camp at the R.A.F. Regiment Light Anti-Aircraft Gunnery School, Watchet.

Exchange Visits for Air Cadets.—Twenty-five cadets of Air Training Corps and of the Combined Cadet Force (R.A.F. sections) are going to Canada and 25 to the U.S.A. on a two weeks' air trip. Simultaneously 50 air cadets will visit this Country—25 from Canada and 25 from the U.S.A.

Royal Observer Corps

Summer Camps

A total of 3,000 men and women (2,250 men and 750 women) from 39 Groups of the Royal Observer Corps are attending Summer camps at R.A.F. Station, Waterbeach, this year.

Materiel

Delta Fighter for The Royal Air Force

In a speech at Cambridge on 7th June, Lord De L'Isle and Dudley, Secretary of State for Air, announced that the R.A.F. is to be equipped with the new delta-winged Gloster GA-5 multi-purpose fighter. The production of this aircraft is to have priority.

Miscellaneous

Under-Secretary of State Flies a Jet.—During a recent visit to the R.A.F. Central Flying School, Little Rissington, the Under-Secretary of State for Air, Mr. George Ward, M.P., flew a Meteor 7 jet aircraft.

Jet Accident Rate Reduced.—In a written reply in the House of Commons at the end of May, Mr. Ward said that the fatal jet accident rate for the previous four months had been substantially reduced. He added that the rate had been falling since 1947.

Help for British North Greenland Expedition.—Five flying boats of R.A.F. Coastal Command and two Hastings of Transport Command are carrying out flights in the Arctic Circle this Summer to assist the British North Greenland Expedition.

Air Survey in Africa.—No. 82 Squadron, the only Lancaster squadron remaining in Bomber Command, has now entered its sixth year of air survey photography in Africa. Since the Spring of 1947 it has covered over 970,000 square miles in many different parts of Africa.

Trophies and Competitions

Dunning Memorial Cup, 1951.—This Cup was won in 1951 by No. 210 Squadron, R.A.F. Station, St. Eval. The Dunning Memorial Cup is awarded to the squadron achieving during the year the highest standard on the Joint Anti-Submarine Course.

VICKERS TROPHY.—No. 70 Squadron has won this new trophy which is now awarded annually for general efficiency among squadrons in the Middle East Air Force.

DUNCAN TROPHY.—No. 74 Squadron are the 1952 winners of this trophy, awarded to the day squadron of Fighter Command achieving the best all-weather flying record. Nos. 1, 56, and 63 Squadrons were joint runners-up.

ESHER TROPHY.—No. 616 (South Yorkshire) Squadron have won the Lord Esher Efficiency Challenge Trophy, awarded annually to the most efficient squadron in the Royal Auxiliary Air Force. No. 604 (County of Middlesex) and No. 600 (County of London) Squadrons were second and third.

DOMINIONS AND COLONIES

CANADA

JET FIGHTER SQUADRON IN THE U.K.—No. 439 Fighter Squadron, consisting of 21 F-86 E Sabre jet aircraft, flew to North Luffenham to join the R.C.A.F. Wing stationed there. This was the first occasion on which the R.C.A.F. had flown jet aircraft across the Atlantic.

R.C.A.F. LANCASTERS TRAIN WITH THE R.A.F.—Lancasters of No. 404 Maritime Squadron have been carrying out exercises with the R.A.F. in the United Kingdom.

TRAINING OF AUXILIARIES AND RESERVES.—It has been announced by Air Force Headquarters that more than 5,000 members of the R.C.A.F. Auxiliary and Reserve will carry out training this Summer.

OPENING OF NEW STATION.—A new Station for No. 4 Flying Training School, previously at Calgary, has now been opened at Penhold, Alta.

GROUND DEFENCE SCHOOL.—The R.C.A.F. opened a Ground Defence School in June at R.C.A.F. Station, Camp Borden, for instructional training in active and passive defence.

AUSTRALIA

PILOTS AND GROUND CREW DECORATED IN KOREA.—Five members of No. 77 R.A.A.F. Squadron have received immediate decorations in recognition of their personal efforts in January and February when the Squadron flew more than 2,200 hours in more than 1,700 missions against the Communists in Korea.

R.A.A.F. PILOTS RECEIVE AMERICAN AIR MEDALS.—Pilots of No. 77 R.A.A.F. Squadron were decorated with American air medals, previously awarded by the U.S. Fifth Air Force, at a recent investiture at the Squadron's advanced air base in Korea.

R.A.A.F. OFFICER TO COMMAND ROYAL AIR FORCE SQUADRON.—A R.A.A.F. officer has been selected to command a Canberra squadron of the R.A.F. In exchange a R.A.F. officer will command a R.A.A.F. Lincoln bomber squadron.

PAKISTAN

ORDERS FOR BRITISH AIRCRAFT

Seventeen Auster Aiglet Trainers have been ordered by the Pakistan Government for the R.P.A.F. Of these, eight are to be fitted out as A.O.P.s, with Army 62-type radio sets, while the others will be used as military trainers. The Aiglet Trainer will go into service with both the R.P.A.F. and the Civil Flying Clubs, under a standardization policy between the Air Force and the Directorate-General of Civil Aviation, which is a branch of the Defence Ministry. A further ten Aiglet Trainers have been ordered by the Pakistan D.G.C.A. for the Civil Flying Clubs, the bulk of whose output of pilots feeds the R.P.A.F., and three Short Sealands, two of which are for the East Bengal Government for liaison work, have been sold to Pakistan this year.

CEYLON

Royal Ceylon Air Force

The Royal Ceylon Air Force, formed at the end of 1950, now consists of a cadre of eight officers and 100 airmen. It is commanded by a R.A.F. Group Captain, assisted by a team of R.A.F. specialists to supervise the various branches of training.

FOREIGN

GREECE

The Royal Air Force Leaves

Withdrawal of the Royal Air Force Mission from Greece has ended a seven-year task of rebuilding the Greek armed forces, during which time the Air Ministry has released £6,500,000 of equipment to the Royal Hellenic Air Force. It included 84 Spitfires, 12 Dakotas, 16 Harvards, 12 Tiger Moths, and large stocks of aircraft spares, radio, and clothing.

In the course of its work, specialist R.A.F. officers trained Greek Air Force officers and men in flying, engineering, signals, armament, equipment and organization methods, both in Greece and at various R.A.F. schools in the United Kingdom. R.H.A.F. officers toured R.A.F. Maintenance Command units and recruiting organization, Royal Observer Corps Headquarters, and the Home Office Civil Defence Organization. The mission provided a wing commander as air adviser to the Greek Defence College at Salonika.

ITALY

Aircraft Industry.—The present-day picture of the Italian aircraft industry is the depressing one of a once thriving national asset, fighting hard for survival against almost insuperable odds.

As is doubtless well known, the Italian aircraft industry was completely closed down after the capitulation in 1943, and this had the extremely adverse effect of halting the development of modern airframe and engine design at the very moment when trends in such matters were undergoing far-reaching changes.

Since the Western Powers have been granting a certain amount of technical assistance to Italy, some recovery in the field of aviation is to be seen, and principal in this sphere must be placed the first Italian-designed jet aircraft, the Fiat G-80, a two-seater trainer powered by a de Havilland Goblin engine. Further versions are planned, powered by the de Havilland Ghost and the Rolls-Royce Nene, to be known as the G-81 and the G-82 respectively. Fiat, in conjunction with the firm of Macchi, is also producing under licence the de Havilland Vampire and is expected shortly to produce the first Italian-built Venom, again in conjunction with Macchi. Other Fiat aircraft types are the G-46, a two-seater basic trainer powered by a Pratt and Whitney R-1340 engine, and the G-59, a single-seat advanced trainer powered by a Rolls-Royce Merlin engine.

Apart from Fiat, which is without doubt the principal Italian firm producing airframes and aero engines, there is the firm of Macchi, which as well as producing Vampires and Venoms in conjunction with Fiat is also turning out a 2/3 seater basic trainer, the MB-416, which is the Italian-built version of the Dutch Fokker S-11. Also engaged on aircraft production are the firms of Piaggio and Ambrosini. The former produce the P-148, a 2/3 seater primary trainer which is in use by the Italian Air Force, and the latter the S-7, a single or two-seater military trainer of which a small series has been ordered by the Italian Air Force.

Finally, mention should be made of three prototype advanced trainers—the Fiat G-49, the Macchi MB-323, and the Piaggio P-150, which have been specially designed to specifications of the Ministry of Defence (Air) and from which, after trials, a choice will be made of one type for the new advanced trainer for the Italian Air Force.

NORWAY

National Service

National Service in the R.N.A.F. was extended from 12 to 18 months in July, 1952.

POLAND

Gliding

The sport of aviation in Poland is controlled by the *Aeroklub Rzeczypospolitej Polskiej* (Aero Club of the Polish Republic). Sharing the club's headquarters in Warsaw is the *Liga Lotnicza* (Air League), formed in 1946 to promote airmindedness and the development of aviation, which supervises the training of pilots and organizes courses in gliding, aero-modelling, and parachuting. Each local club, while retaining its separate identity, is a member of the Air League, as are its individual members. Administration is carried out on a regional basis. In addition, there is a youth organization, *Powszechia Organizacja " Sluzba Polsce "* (Universal Organization " Service to Poland "), which came into being by a Decree of 1948 with the object of giving pre-military training. The facilities offered include technical training and sport, and an independent aeronautical section organizes courses in powered flying, gliding, and parachuting.

To be eligible for glider training, young people of either sex must have reached the age of 16 and be of the requisite standard of medical fitness. Entry is by means of a personal application to the District " Polish Youth Union."

All glider training is carried out according to programmes devised by the Chief Council of the Air League. Briefly, it is divided into three phases—preliminary training, consisting of ground instruction in schools or aero clubs, basic training in aero clubs, and advanced training at selected centres. The training syllabus is split into five stages during which the pupil may qualify progressively for the various international gliding certificates.

The main glider designs are produced by the Glider Institute (*Instytut Szybowcowy*) and are identified by the initial letters I.S. The official title of this institute is *Szybowcowy Zaklad Doswiadczalny* (S.Z.D.) and it is located at Bielsko/Aleksandrowice airfield, some 40 miles West-South-West of Cracow. Some 10 or 11 different types are in current use, ranging from the I.S.-3 or " A.B.C." single-seat primary training glider to their latest models, the single-seat, high performance *Jaskolka* (Swallow) and the two-seater *Bocian* (Stork) intended for use on both day and night cross-country flights, high altitude flights, and competition flying. It is to be noted that these new machines are known as the SZD-8 and SZD-9 respectively, the initials I.S. having been dropped.

Two very interesting models are the I.S.-5 or *Kaczka* (Duck) and the I.S.-6X *Nietoperz* (Bat). The former is an experimental single-seat tail-first glider and the latter, as its name implies, a tailless glider which made its first flight in February, 1951.

The results obtained from this drive to popularize gliding are beginning to be reflected in the field of international competition. Poland now holds four world records, two of which—the women's record for a return flight in the single-seat class and a return flight in the two-seat class were only recently confirmed by the International Aeronautical Federation.

PORTUGAL

Thunderbolts for the Air Force

In February, 1952, a U.S.A. carrier delivered 12 Thunderbolt air craft for the use of the Portuguese Army Air Force.

RUSSIA

Russian Jets in Austria.—The Russians have about 125 MIG-15 jet fighters stationed in their zone of Austria, according to reliable reports. This figure, which represents an increase of 30 per cent. during the past few months, is equivalent to a com-

plete Soviet fighter division. Observers believe that the additional machines have come from Hungary which forms, with the Russian Zone of Austria, a joint Soviet Army air command. The overall strength of this air command, like that of the joint Russian ground forces which it serves, is roughly unchanged. The latest developments mean that the Russian fighter arm in Austria has now been completely re-equipped with jets. The MIGs are stationed at airfields a few miles North and South of Vienna, but away from the main roads. In addition to the jet fighter force, the Russians are believed to have more than 100 fighter-bombers of the PE-2 type in their zone of Austria. These are twin-engined, piston engine machines, equivalent to something between the British Blenheim and Mosquito. Altogether the Russian military air strength in Austria can be conservatively estimated at 250 machines.

NEW RUSSIAN LIGHT BOMBER.—A new undesignated *Mikoyan* twin-jet aircraft will be supplied to Soviet Air Force light bomber units soon. Although experimental models of the aircraft had T-type tails, production aircraft have the elevator unit set about two-thirds way up the fin. Both wings and tail surfaces are swept back. Armament comprises four cannons.

SWEDEN

AIR FORCE ACCIDENT RATE, 1951

During 1951, the following decreases in accident rates were recorded for the R.S.A.F.:—(i) Accidents involving minor damage to aircraft decreased by 25 per cent., compared with 1950. (ii) Accidents involving death or injury to crew have decreased by 10 per cent., compared with the figure for 1950, to 1.5 accidents for 10,000 hours' flying. (iii) The number of accidents involving damage to aircraft was 295 compared with 397 in 1950. A factor contributing to these results is the greater reliability of the jet engine over the piston engine, and the R.S.A.F. have now a greater percentage of jet aircraft in operation than at any previous period.

UNITED STATES

NEW COMMANDER IN THE U.K.—Following the return to the United States of Major-General Leon W. Johnson, former Commanding-General of the United States Third Air Force in Britain, Major-General F. H. Griswold has been appointed in his place.

U.S.A.F. JET FIGHTER WING FOR FRANCE.—It is reported that the U.S. Air Force has assigned another combat air wing to France. The wing is the 137th Fighter-Bomber Wing, using Republic F-84 Thunderjet equipment, and is the ninth Combat Wing assigned to Europe and the third to France.

POLAR LANDING.—The United States Alaskan Air Command announced on 5th May, that a twin-engined U.S.A.F. aircraft equipped with skis had made the first landing at the geographic North Pole. The landing was made after a 135-mile flight from the floating ice island in the Arctic which was occupied by three Air Force men last March for use as a weather observation station.

DOUGLAS REACHES 79,000 FEET.—The altitude reached by the Douglas D-558-II research plane last Summer, termed at the time the highest ever attained by man, has been officially determined as over 79,000 ft. Original measurements, made with a pressure recorder, placed the altitude at 77,000 ft., but the National Advisory Committee for Aeronautics now says that a more accurate measurement made by ground radar indicates that the higher figure was reached.

REVIEWS OF BOOKS

GENERAL

East versus West. By Lieut.-General Sir Giffard Martel, K.C.B., K.B.E., D.S.O., M.C. (Museum Press, Ltd.) 12s. 6d.

Like all General Martel's books, this is an outspoken one. He knows what he wants and his knowledge is empiric. Having commanded the Royal Armoured Corps in the last war, he is an outstanding authority on armoured warfare ; and at one time head of our Military Mission in Russia, he can speak convincingly on that country.

The basic question, as he sees it, is our fear of Russia. During the war, we feared that the Kremlin would make a separate peace, now we fear it will launch another war, and in both cases fear led to appeasement. How is fear to be overcome ? By getting down to facts and then acting with audacity.

The facts are that, though the Russian soldier is a formidable fighter, the Russian army is a fallible machine. It is based on manpower because its main task is the maintenance of internal security, and on account of this it is lacking in mobility. Nor is it a reliable instrument, for at least half its men are drawn from the subjugated peoples within the U.S.S.R., such as the Ukrainians and White Russians.

In these facts we can discover the clues to follow. We should divide our problem under the headings of " hot " and " cold " war—that is, actual war and subversive war. In the first we should not attempt to build on mass manpower (conscription) but instead on mobility, and General Martel considers that twenty armoured and twenty infantry divisions are sufficient, if they are kept in constant readiness and, like fire brigades, can act at a moment's notice.

This may seem an insufficient force to hold back, let alone push back, the Russian hordes. But probably it is not so, if the second half of the problem is carried out—namely, an internal attack on Russia. This first demands a headquarters for the planning and execution of cold war, which by undermining Russia internally will render her externally vulnerable.

In brief, Western policy should be : first to raise comparatively small, highly mobile forces in order to call the Russian bluff, and secondly to wage a vigorous cold war against Russia in order to undermine the prestige of the Kremlin. " It is my belief," writes Martel, " that if we . . . made our preparation for cold war at the same time as we were building up our military strength in Europe, we would . . . achieve our object. Riots and rebellions would arise in Russia in spite of the secret police. Serious dissensions would arise among the Communist leaders, and their power would collapse."

Taken in bulk, the suggestions made revolve round Napoleon's well known maxim : " The whole art of war consists in a well-reasoned and extremely circumspect defensive followed by a rapid and audacious attack." The defensive should be strong enough to overcome our fears, and the offensive powerful enough to wreck Russia internally. Such is the gist of this important book.

Operation Overlord. The Allied Invasion of Western Europe. By Albert Norman. (The Military Service Publishing Co.) $3.75.

Dr. Norman has gone to great pains to marshall all the evidence available for his account of the Allied landings in North-West Europe. The greater part of his book is devoted to the strategic and tactical planning of the operation, tracing it in considerable detail from the initial conception of an assault on Europe, made a few days after the evacuation of the continent in May and June, 1940. It comes, therefore, as something of an anti-climax to find the campaign itself described in a few short chapters.

So much preparation, so much groundwork, presaged a description far more ambitious than that which Dr. Norman actually attempts. It is at this stage of the book that one

begins to feel disappointment. Almost the whole of the fighting described occurs on the right, or American, flank, and the operations in the British and Canadian sectors are given little more than an occasional, cursory glance. This is an American book, it is true, but the picture it presents is gravely unbalanced, so that any uninstructed reader is presented with a very lop-sided view of the initial assault and the subsequent fighting in its early stages.

This is a defect that cannot be ignored, for the whole course of the operation is thereby given the wrong emphasis. The book, by its very title, sets out to tell the story of Operation Overlord, and the detail in which the author describes the preliminaries leads one to expect a much more objective view when it comes to the actual mounting of the assault. The vision, here, is too narrow, too limited, to merit serious consideration as a description of so breath-taking an operation.

Yet the book, in its preliminary study of the assault, is of value for the care and detail with which the author traces the development of the planning. He is eminently just in his acknowledgment of the correctness of the British point of view in the timing of the invasion, and pays a generous tribute to the inventiveness and ingenuity of British technicians in evolving such varied aids to invasion as assault craft, Avre's, Mulberry, and Pluto, to mention only a few. Without them the operation could not have succeeded. It is a pity that the book, which begins with such promise, should tail off into so disappointing an ending.

The Struggle for the Mediterranean, 1939–1945. By Raymond de Belot. (Princeton University Press, Princeton, New Jersey, 1951.) $4.00.

This book, originally published in French under the title *La Guerre Aérovale en Méditerranée*, 1939–1945, was translated by James A. Field, Jr. Its author, Raymond de Belot, is a retired Rear-Admiral in the French Navy. A graduate of the Ecole Navale, he is well qualified to write of the war in the Mediterranean. During the 1914–18 War he served principally in the French submarine service and after it commanded various French submarines and attended the Naval War College. In 1937 and 1938, he acted as Chief of Staff to Admiral Estéva during the Spanish Civil War and, in 1939, was in command of the cruiser *Gloire*. In 1940, he commanded the 10th French Submarine Flotilla in the North Sea. In addition to his professional background, Admiral de Belot has had personal war experience with both the Italian and British Royal Navies. In 1916 and 1917, as a member of the French Adriatic Submarine Flotilla, he operated with the Italians, and, in 1940, his submarine flotilla was under the operational control of the British Admiralty.

His book is divided into five parts. The first two deal with the period of Italian neutrality from September, 1939, to 25th June, 1940, the fall of France, and the consequences of the Franco-German armistice on British and Italian strategy in the Mediterranean. The author gives a fair and unbiased account of the events that led to the British attack on the French Fleet at Mers el Kebir, and on the *Richelieu* at Dakar, in July, 1940. The losses in the French Fleet totalled over 1,300 dead.

With the fall of France, Italy entered the war with no strategic plan, believing that the conflict would be short and that it was already three-quarters won. It was British strategy to remain in the Mediterranean. The British, in the words of Lord Cunningham, were very weak at sea and even weaker in the air, but just because of this very weakness were forced to adopt an aggressive policy which paid good dividends. Part II ends with an account of the operations carried out under this policy.

Part III opens with the story of the German intervention and goes on with a good objective account of the Battle of Matapan, in which the Italians lost three cruisers and the British only one aircraft. Much heavy land fighting followed, and by mid-1942 Rommel was threatening Suez. In the Autumn of 1942, the Allies took the offensive, and Part IV tells of the Allied invasion of North Africa and the Tunisian campaign. The Germans were driven out of Africa. Part V deals with the invasion of Italy and the Italian surrender, and takes the account up to the end of the Mediterranean war.

The book contains a comprehensive catalogue of sources and a good index. It includes a number of clear diagrams in the text and is well bound and printed. It is published in the U.S.A., but is worthy of the attention of all British students of the 1939–1945 Mediterranean operations.

The Happy Hunted. By Brigadier George Clifton, D.S.O., M.C. (Cassell and Co.) 21s.

Let none think that this is just another escaper's book. There is much more here than a description of the author's adventures " in and out of the bag," exciting as they undoubtedly are. Brigadier Clifton is a Regular officer of the New Zealand forces who spent the 1914–18 War (1915–18) at Duntroon " learning to be an officer in comfort." A sapper, he served through the Greek campaign of 1941—a tale of demolitions—as C.R.E., New Zealand Division, but had already seen war in the western Desert during Wavell's first victories. Back in Egypt after the Greek evacuation he was appointed Chief Engineer of a corps, but soon took over the 6th New Zealand Brigade, " commanding infantry for the first time." His tale of desert warfare is a vivid and arresting one : wasting no words it conveys the authentic atmosphere of this kind of modern battle. Conditions being what they were, and George Clifton being the kind of man he is, he could not help but be in the forefront of the fight at many a crisis. And so it came about that he had the ill-luck to be captured in September, 1942, at the Battle of Alam Halfa, Rommel's last offensive.

He lost no time in attempting to escape. His optimistic outlook is conveyed in the phrase " sooner or later some way out of any prison becomes feasible," and he seems to have been right. His African escapes, which involved being shot at, scrambling through barbed wire, picking a way through minefields, and enduring extremes of hunger and thirst, nevertheless ended in failure. Then he was sent to Italy. Sensing that readers are not interested in " the humdrum routine or the psychological reactions of a P.O.W. existence," he introduces us to an almost unbroken series of highly organized escape plans which required the systematic collection of equipment and the exercise of considerable technical, even engineering, ingenuity. At Veano the Escape Committee laid it down that escaping meant " return to duty—not merely getting out of camp for a run in the country." Yet in Italy all the escapes in which Brigadier Clifton took part resulted for him in nothing more than a run in the country, though once he reached, but could not cross, the Swiss frontier. The indomitable spirit of the man comes out when he was shot and badly wounded after dropping from a train on the way to a prison camp in Germany. He was expertly treated in hospital by a doctor who is described as " a very good surgeon—and a good German," and after a long and painful ordeal he emerged with his right leg half an inch shorter than the other. As he says " my escaping ability had been positively foreshortened." Yet escape he did at the ninth attempt, arriving at the Rhine to be warmly welcomed by the Americans near Remagen. If the author, as he says, " had great fun " writing this book, his readers will be glad to make the acquaintance of a gallant and capable officer—he won the D.S.O. three times—obviously a man after Freyberg's own heart.

The Story of the Royal Tournament. By Lieut.-Colonel P. L. Binns. (Gale and Polden, Ltd.) 15s.

From its humble beginnings at the Royal Agricultural Hall in 1880, the Royal Tournament has grown into one of the great events of the London year, drawing its thousands to Earls Court to witness its magnificent spectacle of pageantry and colour. Few who go now realize the wealth of military history which lies behind the annual show, and it was a very happy inspiration which led Lieut.-Colonel Binns to write its history.

The early days were largely a matter of trial and error in an attempt to find what would best serve the public taste, and the first two tournaments resulted in a financial loss to the organizers. But they had faith in their idea of presenting to the public an annual display which would illustrate some aspects of army life, and gradually the tournament grew up into the magnificent spectacle which we can enjoy to-day.

This is a book that was well worth the writing, for there is much of humour and interest to enliven the story of the tournament's growth to its full maturity. There is, too, much of military history to be found in these pages, showing how the event has reflected through the years the gradual development of weapons, from the sword and lance of 1880, the Maxim and Gatling guns of 1887, the Nordenfeldt of the same year, to the modern and complicated weapons of to-day.

Just as interesting as the tournament itself is the author's description of the organization behind the scenes, of which he traces the development from the first tournament to the last, a span of 71 years. Lieut.-Colonel Binns is to be congratulated on a book which holds the interest of the reader throughout and which, at the same time, provides a valuable record of one of the most colourful and inspiring events of the London season.

The Blind Eye of History. A study of the origins of the present Police Era. By Charles Reith. (Faber and Faber, Ltd.) 18s.

The author has written other books on the subject of police: to those who have not read them, this work will come as one of those rare and fascinating books which open up a new and unexplored territory. In this Country we tend to take our police system, like many other of our institutions, for granted, as something inevitable, or, even more inadequately, to regard it as simply a local form of some universal principle of modern governmental administration. Such myopia is perhaps excusable, for Mr. Reith's title conveys his contention that history has been blind to the part played through the whole recorded experience of the human race by the police, since, however perfect a legal system may be, laws fail completely if they cannot be enforced. Mr. Reith suggests that two different solutions have been found to this problem: he names them "kin-police" and "ruler-appointed police"; he traces both of these types back to early clan and tribal history and shows their consequent development. Roughly speaking, the kin-police has evolved into the British and Commonwealth and American police systems; the ruler-appointed police has evolved into the gendarmerie and totalitarian police systems used over the rest of the world.

The reader will perhaps be pleased, though not surprised, to discover that the new system of police which was created in England after the breakdown of the antique parish constable apparatus "is the most perfect form of law enforcement machinery in a community which the wit of man has so far devised." It is to be hoped that his complacency will be shattered when he goes on to read "It is in no way the product of the character and genius of the English people. They opposed its making at every stage of it, before, and for some time after, its completion, with unanimity and determination which had the rare effect of uniting all classes and political parties at a time when the Country was more than normally riven by class and party conflict. . . . It is almost solely the product of personalities. . . ." Soldiers may be justly proud to find that in the author's opinion the greatest of these personalities was Charles Rowan, a soldier himself, who had joined the 52nd Foot as an ensign at the age of fourteen, was selected and trained by Sir John Moore, was a brevet colonel when he was thirty, and was second-in-command of his old Regiment at Waterloo. He had retired and become a magistrate in Ireland before he and a young barrister, Richard Mayne, were appointed as the first commissioners of the Metropolitan Police. Their partnership, says the author, was a perfect one, and a phenomenon unparalleled in British administrative history.

Those who have had experience of acting "in aid of the civil power" will note and endorse the author's opinions regarding the use of military force to repress breaches of the law. All students of military history will follow with interest his explanation of the contrast between William Howe's early record as a brilliant and reliable officer and his conduct in the American War of Independence which, he says, "is still regarded as an insoluble mystery."

The book contains a short, though adequate, bibliography and a comprehensive index.

NAVAL

My Naval Life. By Stephen King-Hall. (Faber and Faber, Ltd.) 25s.

Stephen King-Hall has had an unusually varied and interesting career during the first fifty years of his life. Though this new book abounds with excellent stories it is by no means merely a collection of breezy naval yarns. Son, grandson, and nephew of admirals, with a family tradition of more than a hundred years behind him, it was almost inevitable that the Navy should have been his chosen career. As a small boy, in 1906, he was two inches short of the minimum height requirement for a naval cadet and it was only the prayers of his father, helped by the resource of his admiral uncle, who took the Medical Director-General of the Navy out to dinner, that got him into Osborne.

At Osborne he by no means proved himself a paragon. Moving on to Dartmouth, in 1908, he went to sea for six months in 1910, in the training cruiser *Cumberland*, and spent the next four years as a midshipman in the Home Fleet flagship and on the Cape Station. On promotion to sub-lieutenant early in 1914, young King-Hall joined the *Southampton*, flagship of the 2nd Light Cruiser Squadron. In her he was destined to see more than two years' active service. Before describing them he devotes several pages to the Navy's unpreparedness for the war that was already looming immediately ahead. When the war broke out, on 4th August, 1914, the Navy "was like the prehistoric Brontosaurus, a very big body with a very small brain." It had no staff for tactical and strategical purposes, no staff college and no trained staff officers. Despite the fact, demonstrated by an unnamed British submarine commander, that submarines could operate hundreds of miles from their bases, Scapa Flow had no anti-submarine defences.

The author claims, quite wrongly, that the *Southampton* was the only Grand Fleet ship present at all three main North Sea actions of the 1914–18 War. Wisely, he refrains from entering into the controversies that have surrounded these battles and contents himself with accounts of his own personal experiences. At Heligoland Bight he sees the battlecruisers going into action; at Dogger Bank, the destruction of the *Blücher*. But it was Jutland that provided his most thrilling moments. He sees the *Indefatigable* and *Queen Mary* blow up; the Grand Fleet coming into action; the end of the *Defence*. The *Southampton* herself comes under heavy fire during the daylight fighting, but it is during the night that she meets her greatest ordeal. In close action she suffers many casualties, and the author himself has a miraculous escape.

In 1917, King-Hall qualified as a torpedo officer and then saw out the war in a submarine depot ship at Harwich. While serving in the Admiralty, in 1919, where he wrote the first Cruiser Manual ever produced, he was awarded the R.U.S.I. gold medal for 1918, for his essay on the influence of submarines in future naval warfare. After a spell at the R.N. Staff College he spent two years on the China Station and twelve months at the Military Staff College, Camberley. Two years as Principal Intelligence Officer, Mediterranean Fleet, followed before he joined the *Repulse* in the Home Fleet. He was promoted Commander in 1928, and retired at his own request in 1929.

His book is well illustrated, but at least one photograph, the famous one of the *Queen Mary* blowing up at Jutland, is incorrectly captioned. Apart from some historical errors and obvious misprints there is little else to criticize.

ARMY

The German Army in the West. By General Siegfried Westphal (Translation) (Cassel and Co., Ltd.) 17s. 6d.

Though General Westphal's book may disappoint many a soldier, it will appeal to all interested in German affairs during the years 1920–1945. The author attempts no objective study of the campaigns in which he played a leading part as Chief of Staff to Rommel in North Africa, to Kesselring in Italy, and to Rundstedt during the closing stages of the war in the West; but, whilst refuting the charges of atrocities made against the Army,

he attempts to prove that the war was lost through no failure on the part of the General Staff. His theme is, of course, that Hitler led the " peace loving German nation " into war and lost it through not following the advice of his experts.

The first part of his book is a survey of the inter-war years and deals with the rise of the Nazi party, the expansion and reorganization of the Army, and the emergence of O.K.W. as Hitler's counter to the influence of the re-formed General Staff. The story, told soberly, records the struggle for power within the " Dictator State " and shows that the General Staff lost the fight through those very qualities which had made it so predominant in a former age, and through its failure to produce at the critical stage an outstanding personality comparable to those at the head of the other two Services. The resulting friction and its effect on the conduct of the war are clearly portrayed and enviously compared with the harmony which the Allies achieved in their big unified commands.

In the campaign in the West in 1939–40, General Westphal played only a minor role, and his interesting criticisms of the Allied strategy are based on insufficient evidence. His assertion that England could have been over-run in September, 1940, by twelve German divisions in six weeks is unlikely to receive credence from those in possession of all the facts.

In the Desert under Rommel he appears rather at a loss, serving a commander who fought his battles in an unorthodox way and who led from the front. Though giving Rommel the praise he deserves for the results he achieved, the arrogance of his training forces Westphal to record that " the command of an Army was too high a promotion for Rommel, who had not passed through the refining school of the General Staff." To declare that the battle of Alam Halfa was only lost through lack of petrol can only reflect on the Staff and the Army he is at such pains to defend.

His account of the Italian campaign is absorbing, though when he leaves the high level story to discuss events at the front he is often at fault. The failure of the German Intelligence at this period is made clear, and lack of knowledge of the administrative problems facing the Allies tends to blunt his arguments as to how they could have won complete success sooner. Though General Freyberg could recommend the bombing of Cassino, he had no power to order it, and to blame him for the destruction of the famous monastery is to echo mistaken views.

He is recalled to the Western front in September, 1944, to find Rundstedt, who had just been reinstated, striving to control a situation which had grown critical. He agrees that " one full blooded punch " would have reached the Rhine, but thinks it would have been held there. The conception of the Arnhem operation wins his approval though the principal and local reason for its failure eludes him. His account of the discussions preceding the Ardennes offensive is of great interest, and his account of Himmler as an " amateur " army commander makes one realize how Hitlerism defeated itself.

History of the Corps of Royal Engineers, Volumes V and VI. Edited by Major-General H. L. Pritchard. (The Institution of Royal Engineers, Chatham, 1952.) 35s. a Volume

These volumes carry on the history of the Corps, less the signal units, from the eve of the 1914–18 War until its close. This work is a history, not a technical treatise. Volume V deals with the services of the Royal Engineers in France, Flanders, Italy, and the Home Front. Volume VI, which is much shorter, is concerned with Gallipoli, Macedonia, Egypt, and Palestine.

Both volumes give an adequate outline of the various campaigns and operations followed by clear and well-arranged narratives of the diverse and manifold activities of the Corps in each. Much detail is included but it does not obscure the story which tells how the problems which arose—and they were many and difficult—were overcome. The authors comment on the small establishments, inadequate preparations, and the mistaken

ideas which marked the years prior to 1914, especially in regard to field works and transportation.

Besides showing how much the Army owes to the ubiquitous Royal Engineer, Volume V gives glimpses of the activities of small units, particularly the field companies. It also contains excellent chapters on special subjects, including defensive and offensive gas warfare. The development of transportation is described in a series of chapters which trace the story of this service from its very small beginnings. For some time after the outbreak of war the magnitude of the problem involved had not been appreciated, and, though the railways had been controlled on the right lines in South Africa, the system had been altered just prior to 1914. Another factor was the inability of the French to meet their obligations in respect of transportation for the B.E.F. How these factors affected the conduct of operations and the measures taken in the great reorganization of late 1916, just in time to avert a breakdown, are well described.

Volume VI is of particular interest as the campaigns covered took place in undeveloped countries, often with inadequate means and, of course, without the mechanical aids, such as bulldozers, available in the last war. The work of the Royal Engineers in Egypt and Palestine was, as usual, of the most varied and complex nature, and even included anti-malarial projects, but there were two major problems—water supply and transportation. Had these not been solved, as they were, the advance into Palestine and the subsequent victories would not have been possible. The narrative gives a clear account of the genesis, construction, and working of the desert railway and the pipe-line which carried water from the Nile to Southern Palestine. It records, too, the ever-present need to find and develop water during mobile operations, and the success which usually crowned the efforts made.

These volumes will delight Sappers of the " Old War," but they should have a much wider appeal. Present and future members of the Corps should study this work and, by comparing what is recorded with their own experience or descriptions of operations in the last war, may learn lessons for the future. Staff officers, too, would do well to read and ponder over parts of this work, especially the sections and chapters dealing with special subjects. For, as the Chief Royal Engineer remarks in his Foreword : " It is only by studying how things have changed that we can make any sort of estimate as to their future trend."

The Worcestershire Regiment. 1922–1950. By Lieut.-Colonel Lord Birdwood, M.V.O. (Gale and Polden, Ltd.) 18s.

This regimental history covers not only the stories of the two Regular battalions from 1922 to 1950, but deals also with the histories of the four Territorial and two New Army battalions during their respective periods of embodiment. The author has adopted the system of taking each unit in turn, and following its fortunes consecutively. This has resulted in a series of stirring accounts of hard work, hard fighting, cheerful endurance, and adventure, which make pleasant and easy reading, not only for members of the Regiment itself, past, present, and future, but for all who enjoy enlarging their knowledge of that modest and gallant fighting man, the ordinary British infantry soldier.

Inevitably, by the fortune of war, as the author himself says, it fell to certain battalions to take a more intense part in the events of 1939–45 than their less fortunate confrères. But, without departing at all from a correct sense of proportion, the author has managed to allot to each unit an adequate share of space to do full justice to those who were doomed to the less spectacular but vitally important tasks of draft-training and home defence. Only those who have experienced these roles as well as active service realize how much harder it is to maintain soldierly discipline and morale in a training or home defence unit than in one which is engaged on active operations

This book shows how well all units of The Worcestershire Regiment met both the test of hard fighting and the harder test of " missing the show." Between them the eight battalions covered many of the important theatres of war—Eritrea, North Africa,

Waziristan, Burma, North-West Europe (both Dunkirk and "Overload"), besides less active work in Iceland and Southern India. The 1st Battalion, having had the misfortune to be captured at Tobruk, was re-formed from the 11th Battalion in good time to maintain the reputation which it had gained in Africa, in the final advance from Normandy to the Elbe.

Four appendices give brief biographies of the Colonels of the Regiment, lists of Commanding Officers, Honours and Awards, and the Regimental Roll of Honour. There is a comprehensive index.

The Essex Regiment. 1929–1950. By Colonel T. A. Martin, M.B.E. (The Essex Regiment Association.) 21s.

This comprehensive book narrates the history of all units of The Essex Regiment, including those which became units of the Royal Artillery during the war, as well as the Essex Home Guard, and the Allied Regiments of the Dominions. In including all these the author has shown a true sense of the value of regimental tradition. Artillery officers, who have had the honour of serving with any of those infantry units, temporarily metamorphosized into gunners, know full well how much those units owed to the regimental spirit and traditions of their parent infantry regiment.

It is a book written primarily for those who have served in The Essex Regiment or who are connected with it by family ties. A great deal of information of a personal and detailed nature is given, which will be of absorbing interest to those who themselves served with the personalities mentioned. Throughout the book, however, there is also a wealth of good plain narrative of hard-fought infantry battles, which will be readable with keen interest by all soldiers.

The various units of The Essex Regiment between them fought in nearly a score of different countries, comprising not only the main theatres of war but several important side shows such as Syria, Iraq, and Dakar. There is, therefore, much scope for those who wish to study the methods, difficulties, and decisive importance of modern infantry in widely different conditions of climate and terrain. One of the battalions even took part (as spectators and passengers) in a fight with the eight-inch cruiser *Hipper*! Another (the 10th Battalion), converted into a parachute battalion, took part in the airborne attacks on the Normandy Coast and on the Rhine. The Essex Regiment held its own in a variety of war experiences!

There are 39 maps, many of which show the local detail of battalion engagements. It is slightly disappointing that, with such a wealth of maps, there is a lack of good theatre of war maps. Owing to the use of names which cannot be found in a normal atlas it is a little difficult to follow some of the general movements. An excellent index and many first-class photographs are included.

History of the 8th Gurkha Rifles. 1824–1949. By Lieut.-Colonel H. J. Huxford, O.B.E. (Gale and Polden, Ltd.) 30s.

This work describes the life of a fine old Regiment of the Indian Army and its war service, from the Burma War of 1825–1826 to the end of the war against Japan. Raised in 1824 and 1835, respectively, both Regular battalions were originally local units in Assam. Taken into the Bengal Line in 1861, they finally became the 1st and 2nd Battalions, 8th Gurkha Rifles, in 1907. The author succeeds in presenting an inspiring story of devotion, fighting spirit, and the other qualities and skills of the Regiment which were, and still are, the essentials of good Infantry.

The Regiment missed service in the Second Afghan War owing to trouble with the Nagas flaring up at the same time. In fact, both battalions were constantly employed on the little known North-East Frontier and saw no service in the North-West, with the exception of a detachment sent to garrison Gilgit in 1898, until the Third Afghan War and after. The 8th Gurkhas served in France, Egypt, Palestine, and Mesopotamia in the

1914–18 War, during which a 3rd Battalion was raised. The Regiment, gradually increased to four battalions, had a most distinguished record in the 1939–45 War on the North-West Frontier, in Iraq, North Africa, Italy, Burma (three battalions), and Java. The services of each battalion, and of the draft-finding units, during this war are carefully described in separate chapters.

This handsome volume of some 350 pages is very well arranged and well produced and includes some good illustrations and clear sketch maps. In addition to the usual annexures, there are some interesting appendices containing a short description of Nepal, notes on regimental customs, and other details ; and a brief story of the Assam Rifles, with whom the Regiment had close associations. This is a very good regimental history in spite of the necessary compression.

AIR

Tedder. By Roderic Owen. (Collins.) 18s.

Roderic Owen's book on Tedder hardly does justice to the man he sets out to describe. This is not Mr. Owen's fault since he has had to depend on the opinions expressed by a number of people, each of whom can only have seen one facet of a complex and most interesting individual. Where Mr. Owen has failed is to bring together, in the early part of the book, these various opinions into a homogeneous and understandable character-portrait. In the later chapters, where he describes the man he met in North Africa, a much clearer picture emerges. The Tedder who built up the Desert Air Force into a first-class fighting machine, and who balanced the needs of his bombing offensive against the claims of the Navy and the Army for air support, becomes a comprehensible and living figure.

To this extent the book is useful. The reader can appreciate the tensions, the conflict of interest that arose from the requirements of this many-sided campaign, one third land, one third sea, and one third air. Such arbitrary divisions in the importance of the three functions may arouse criticisms, but in my view such an allocation is substantially correct. Without air superiority the Army could hardly advance. Without control of sea communications, neither the Army nor the Air could be supplied, nor if this control failed could the enemy be defeated. And the Navy could not function effectively without air support. Tedder achieved this balance of effort, and Mr. Owen pays tribute to the qualities which enabled this vital contribution towards victory to be made with the minimum of friction and the maximum of good will.

In other matters Mr. Owen is not so happy. English women may feel affronted to read that it needed an Australian wife to understand and sympathize with the rank and file of the R.A.F. This is just plain nonsense. The first Lady Tedder did not establish her contacts with the airmen and airwomen because she happened to be born in Australia, but because she was naturally a kind and sympathetic woman. Such are born in every country, none having a prerogative in this matter. On the whole a useful book, but falling short of what should have been written about an outstanding personality.

ADDITIONS TO THE LIBRARY

(*Books for Reference in the Library only)

GENERAL

THE LETTERS OF THEODORE ROOSEVELT. Volumes III and IV. The Square Deal 1901–1903 and 1903–1905. Edited by Elting E. Morrison. Royal 8vo. 709 and 1,437 pages. (Harvard University Press, 1951.) $20.00

HISTORY OF THE TIMES. Volume IV. Part I, 1912–1920. Part II, 1921–1948. Royal 8vo. 1714 pages. (*The Times*, 1952.) 50s.

ILLUSTRATED ENGLISH SOCIAL HISTORY. Volume II. The Age of Shakespeare and The Stuart Period. Volume III. The Eighteenth Century. By G. M. Trevelyan. Demy 8vo. 199/205 pages. (Longmans, Green, 1950.) 18s. and 25s.

THE STORY OF THE ROYAL TOURNAMENT. By Lieut.-Colonel P. L. Binns. Demy 8vo. 155 pages. (Gale and Polden, 1952.) 15s. Presented by the Publishers. (See Review in this JOURNAL.)

THE STRUGGLE FOR THE MEDITERRANEAN. By Raymond de Belot. Medium 8vo. 287 pages. (Princeton University Press, 1951.) $4.00. Presented by the Publishers. (See Review in this JOURNAL.)

OPERATION OVERLORD. The Allied Invasion of Western Europe. By Albert Norman. Medium 8vo. 230 pages. (Military Service, 1952.) $3.75. Presented by the Publishers. (See Review in this JOURNAL.)

"ARABS, OIL AND HISTORY." By Kermit Roosevelt. Demy 8vo. 271 pages. (Gollancz, 1949.) 15s.

ARABIAN JUBILEE. By H. St. John B. Pilby. Medium 8vo. 279 pages. (Robert Hale, 1952.) 30s.

ADMIRAL SIR THOMAS LOUIS, BART. One of Nelson's "Band of Brothers." By H. B. Louis. Crown 8vo. 212 pages. (St. Edward's College, Malta, 1951.) 6s. 6d.

THE WHITE CONTINENT. A Story of the Antarctic. By Thomas Henry. Demy 8vo. 211 pages. (Eyre and Spottiswoode, 1952.) 16s.

THE HISTORIC STORY OF THE CORONATION CEREMONY AND RITUAL. By L. E. Tanner. Foolscap 4to. 24 pages. (H.M.S.O., 1952.) 2s. 6d.

NAPOLEON III IN ENGLAND. By Ivor Guest. Royal 8vo. 212 pages. (British Technical and General Press, 1952.) 18s.

THE TEA CLIPPERS. An account of the China Tea Trade and some of the British Sailing Ships engaged in it from 1849–1869. By David R. MacGregor. Medium 8vo. 271 pages. (Percival Marshall, 1952.) 25s.

SORGE: SOVIET MASTER SPY. By C. A. Willoughby. Demy 8vo. 256 pages. (Kimber, 1952.) 15s.

THE PEACE OF PARIS 1763. By Z. E. Rashed. Demy 8vo. 269 pages. (Liverpool University Press, 1951.) 15s.

MY INDIA. By Jim Corbett. Large Post 8vo. 190 pages. (Oxford University Press, 1952.) 10s. 6d.

PORTRAIT OF EUROPE. By S. de Madariaga. Demy 8vo. 203 pages. (Hollis and Carter, 1952.) 18s.

AVENUES OF HISTORY. By L. B. Namier. Demy 8vo. 201 pages. (Hamish Hamilton, 1952.) 15s.

SPYCATCHER. By Oreste Pinto. Demy 8vo. 175 pages. (Werner Laurie, 1952.) 12s. 6d.

TWO EGGS ON MY PLATE. By O. R. Olsen. Demy 8vo. 298 pages. (Allen and Unwin, 1952.) 15s.

IRELAND HER OWN. By T. A. Jackson. Large Post 8vo. 443 pages. (Corbett Press, 1947.) 21s.

THE IMPACT OF SCIENCE ON SOCIETY. By Bertrand Russell. Crown 8vo. 139 pages. (George Allen and Unwin, 1952.) 7s. 6d.

ECONOMIC ASPECT OF SOVEREIGNTY. By R. G. Hawtrey. Demy 8vo. 191 pages. (Longmans, Green, 1952.) 24s.

NAPOLEON AND THE DARDANELLES. By V. J. Puryear. Medium 8vo. 437 pages. (University of California Press, 1951.) $5.00

THE PROBLEM OF POWER. By Lord Radcliffe. Crown 8vo. 110 pages. (Secker and Warburg, 1952.) 8s. 6d.

THE ARABS IN HISTORY. By Bernard Lewis. Crown 8vo. 195 pages. (Hutchinson, 1950.) 7s. 6d.

CIANO'S DIARY. 1937–1938. Translated by Andreas Mayor. Demy 8vo. 219 pages. (Methuen, 1952.) 21s.

THE WHITE RABBIT. The Story of Wing Commander F. F. E. Yeo-Thomas, G.C., M.C. Demy 8vo. 261 pages. (Evans, 1952.) 16s.

RETROSPECT. The Memoirs of The Rt. Hon. Viscount Simon, G.C.S.I., G.C.V.O. Royal 8vo. 327 pages. (Hutchinson, 1952.) 25s.

GENERAL MARSHALL. A Study In Loyalties. By Robert Payne. Demy 8vo. 335 pages. (Heinemann, 1952.) 25s.

MIRROR TO RUSSIA. By Marie Noele Kelly. Medium 8vo. 241 pages. (Country Life, 1952.) 21s.

EAST AND WEST OF TITO. By Harry Hodgkinson. Medium 8vo. 187 pages. (Gollancz, 1952.) 12s. 6d.

DEFENCE OF WESTERN EUROPE. By Drew Middleton. Medium 8vo. 255 pages. (Muller, 1952.) 15s.

MEMOIRS. By Franz Von Papen. Medium 8vo. 629 pages. (André Deutsch, 1952.) 25s.

IN AN AGE OF REVOLUTION. By Cyril Garbett. (Archbishop of York.) Medium 8vo. 318 pages. (Hodder and Stoughton, 1952.) 20s.

HISTORY OF THE O'BRIENS. From Brian Boroimhe, A.D.1000–1945. By Honble. Donough O'Brien. Medium 8vo. 289 pages. (Batsford, 1949.) 30s.

THE HIDDEN HISTORY OF THE KOREAN WAR. By I. F. Stone. Large Post 8vo. 263 pages. (Turnstile Press, 1952.) 21s.

L'ANGLETERRE EN MÉDITERRANEE. By Jean Tonnelé. Royal 8vo. 223 pages. (Charles-Lavauzelle, 1952.)

THE BLIND EYE OF HISTORY. By Charles Reith. Medium 8vo. 263 pages. (Faber, 1952.) 18s. Presented by the Author. (See Review in this JOURNAL.)

THE HAPPY HUNTED. By George Clifton. Demy 8vo. 392 pages. (Cassell, 1952.) 21s. Presented by the Publishers. (See Review in this JOURNAL.)

NAVAL

MY NAVAL LIFE. By Stephen King-Hall. Medium 8vo. 287 pages. (Faber, 1952.) 18s. Presented by the Publishers. (See Review in this JOURNAL.)

PORTRAIT OF AN ADMIRAL. The Life and Papers of Sir Herbert Richmond. By A. J. Marder. Medium 8vo. 407 pages. (Jonathan Cape, 1952.) 30s.

ARMY

*THE HISTORY OF THE CORPS OF ROYAL ENGINEERS. Volumes V and VI. Edited by Major-General H. L. Pritchard. Medium 8vo. 1172 pages. (Institution of Royal Engineers, 1952.) Presented by the Corps of Royal Engineers. (See Review in this JOURNAL.)

*A HISTORY OF THE UNIFORM OF THE SOUTH STAFFORDSHIRE REGIMENT. (38th and 80th Foot.) Volume I (1705–1854) and Volume II (1854–1951). With paintings, photographs, tracings and illustrations. Typescripts. Compiled and presented by Lieut.-Colonel M. B. Savage, C.B.E., D.S.O.

*THE ESSEX REGIMENT. By Colonel T. A. P. Martin. Demy 8vo. 667 pages. (The Essex Regiments Association, 1952.) 21s. Presented by the Regiment. (See Review in this JOURNAL.)

*THE WORCESTERSHIRE REGIMENT. By Lieut.-Colonel Lord Birdwood. Demy 8vo. 301 pages. (Gale and Polden, 1952.) 18s. Presented by the Publishers. (See Review in this JOURNAL.)

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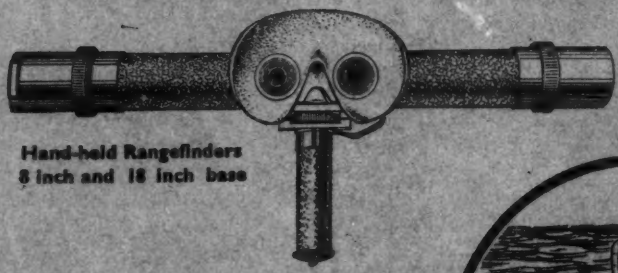

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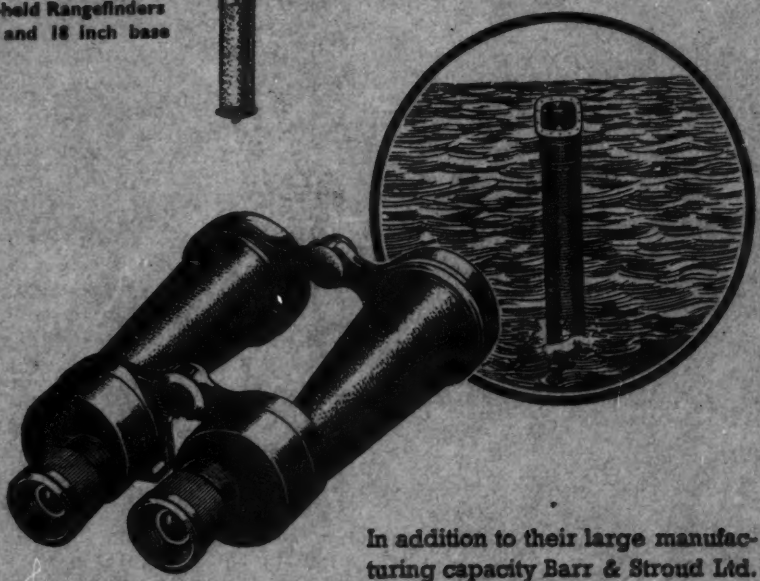

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